

E700 Electric Guns

Customer Product Manual

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NORDSON CORPORATION • DULUTH, GEORGIA • USA
www.nordson.com



For CE Declaration, refer to melter manual.

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E700 Electric Guns

Safety

Read this section before using the equipment. This section contains recommendations and practices applicable to the safe installation, operation, and maintenance (hereafter referred to as “use”) of the product described in this document (hereafter referred to as “equipment”). Additional safety information, in the form of task-specific safety alert messages, appears as appropriate throughout this document.



WARNING: Failure to follow the safety messages, recommendations, and hazard avoidance procedures provided in this document can result in personal injury, including death, or damage to equipment or property.

Safety Alert Symbols

The following safety alert symbol and signal words are used throughout this document to alert the reader to personal safety hazards or to identify conditions that may result in damage to equipment or property. Comply with all safety information that follows the signal word.



WARNING: Indicates a potentially hazardous situation that, if not avoided, can result in serious personal injury, including death.



CAUTION: Indicates a potentially hazardous situation that, if not avoided, can result in minor or moderate personal injury.

CAUTION: (Used without the safety alert symbol) Indicates a potentially hazardous situation that, if not avoided, can result in damage to equipment or property.

Responsibilities of the Equipment Owner

Equipment owners are responsible for managing safety information, ensuring that all instructions and regulatory requirements for use of the equipment are met, and for qualifying all potential users.

Safety Information

- Research and evaluate safety information from all applicable sources, including the owner-specific safety policy, best industry practices, governing regulations, material manufacturer's product information, and this document.
- Make safety information available to equipment users in accordance with governing regulations. Contact the authority having jurisdiction for information.
- Maintain safety information, including the safety labels affixed to the equipment, in readable condition.

Instructions, Requirements, and Standards

- Ensure that the equipment is used in accordance with the information provided in this document, governing codes and regulations, and best industry practices.
- If applicable, receive approval from your facility's engineering or safety department, or other similar function within your organization, before installing or operating the equipment for the first time.
- Provide appropriate emergency and first aid equipment.
- Conduct safety inspections to ensure required practices are being followed.
- Re-evaluate safety practices and procedures whenever changes are made to the process or equipment.

User Qualifications

Equipment owners are responsible for ensuring that users:

- receive safety training appropriate to their job function as directed by governing regulations and best industry practices
- are familiar with the equipment owner's safety and accident prevention policies and procedures
- receive, equipment- and task-specific training from another qualified individual

NOTE: Nordson can provide equipment-specific installation, operation, and maintenance training. Contact your Nordson representative for information

- possess industry- and trade-specific skills and a level of experience appropriate to their job function
- are physically capable of performing their job function and are not under the influence of any substance that degrades their mental capacity or physical capabilities

Applicable Industry Safety Practices

The following safety practices apply to the use of the equipment in the manner described in this document. The information provided here is not meant to include all possible safety practices, but represents the best safety practices for equipment of similar hazard potential used in similar industries.

Intended Use of the Equipment

- Use the equipment only for the purposes described and within the limits specified in this document.
- Do not modify the equipment.
- Do not use incompatible materials or unapproved auxiliary devices. Contact your Nordson representative if you have any questions on material compatibility or the use of non-standard auxiliary devices.

Instructions and Safety Messages

- Read and follow the instructions provided in this document and other referenced documents.
- Familiarize yourself with the location and meaning of the safety warning labels and tags affixed to the equipment. Refer to *Safety Labels and Tags* at the end of this section.
- If you are unsure of how to use the equipment, contact your Nordson representative for assistance.

Installation Practices

- Install the equipment in accordance with the instructions provided in this document and in the documentation provided with auxiliary devices.
- Ensure that the equipment is rated for the environment in which it will be used and that the processing characteristics of the material will not create a hazardous environment. Refer to the Material Safety Data Sheet (MSDS) for the material.
- If the required installation configuration does not match the installation instructions, contact your Nordson representative for assistance.
- Position the equipment for safe operation. Observe the requirements for clearance between the equipment and other objects.
- Install lockable power disconnects to isolate the equipment and all independently powered auxiliary devices from their power sources.
- Properly ground all equipment. Contact your local building code enforcement agency for specific requirements.
- Ensure that fuses of the correct type and rating are installed in fused equipment.
- Contact the authority having jurisdiction to determine the requirement for installation permits or inspections.

Operating Practices

- Familiarize yourself with the location and operation of all safety devices and indicators.
- Confirm that the equipment, including all safety devices (guards, interlocks, etc.), is in good working order and that the required environmental conditions exist.
- Use the personal protective equipment (PPE) specified for each task. Refer to *Equipment Safety Information* or the material manufacturer's instructions and MSDS for PPE requirements.
- Do not use equipment that is malfunctioning or shows signs of a potential malfunction.

Maintenance and Repair Practices

- Perform scheduled maintenance activities at the intervals described in this document.
- Relieve system hydraulic and pneumatic pressure before servicing the equipment.
- De-energize the equipment and all auxiliary devices before servicing the equipment.
- Use only new factory-authorized refurbished or replacement parts.
- Read and comply with the manufacturer's instructions and the MSDS supplied with equipment cleaning compounds.

NOTE: MSDSs for cleaning compounds that are sold by Nordson are available at www.nordson.com or by calling your Nordson representative.

- Confirm the correct operation of all safety devices before placing the equipment back into operation.
- Dispose of waste cleaning compounds and residual process materials according to governing regulations. Refer to the applicable MSDS or contact the authority having jurisdiction for information.
- Keep equipment safety warning labels clean. Replace worn or damaged labels.

Equipment Safety Information

This equipment safety information is applicable to the following types of Nordson equipment:

- hot melt and cold adhesive application equipment and all related accessories
- pattern controllers, timers, detection and verification systems, and all other optional process control devices

Equipment Shutdown

To safely complete many of the procedures described in this document, the equipment must first be shut down. The level of shut down required varies by the type of equipment in use and the procedure being completed. If required, shut down instructions are specified at the start of the procedure. The levels of shut down are:

Relieving System Hydraulic Pressure

Completely relieve system hydraulic pressure before breaking any hydraulic connection or seal. Refer to the melter-specific product manual for instructions on relieving system hydraulic pressure.

De-energizing the System

Isolate the system (melter, hoses, guns, and optional devices) from all power sources before accessing any unprotected high-voltage wiring or connection point.

1. Turn off the equipment and all auxiliary devices connected to the equipment (system).
2. To prevent the equipment from being accidentally energized, lock and tag the disconnect switch(es) or circuit breaker(s) that provide input electrical power to the equipment and optional devices.

NOTE: Government regulations and industry standards dictate specific requirements for the isolation of hazardous energy sources. Refer to the appropriate regulation or standard.

Disabling the Guns

All electrical or mechanical devices that provide an activation signal to the guns, gun solenoid valve(s), or the melter pump must be disabled before work can be performed on or around a gun that is connected to a pressurized system.

1. Turn off or disconnect the gun triggering device (pattern controller, timer, PLC, etc.).
2. Disconnect the input signal wiring to the gun solenoid valve(s).
3. Reduce the air pressure to the gun solenoid valve(s) to zero; then relieve the residual air pressure between the regulator and the gun.

General Safety Warnings and Cautions

Table 1 contains the general safety warnings and cautions that apply to Nordson hot melt and cold adhesive equipment. Review the table and carefully read all of the warnings or cautions that apply to the type of equipment described in this manual.

Equipment types are designated in Table 1 as follows:

HM = Hot melt (melters, hoses, guns, etc.)

PC = Process control

CA = Cold adhesive (dispensing pumps, pressurized container, and guns)

Table 1 General Safety Warnings and Cautions

Equipment Type	Warning or Caution
HM	 WARNING: Hazardous vapors! Before processing any polyurethane reactive (PUR) hot melt or solvent-based material through a compatible Nordson melter, read and comply with the material's MSDS. Ensure that the material's processing temperature and flashpoints will not be exceeded and that all requirements for safe handling, ventilation, first aid, and personal protective equipment are met. Failure to comply with MSDS requirements can cause personal injury, including death.
HM	 WARNING: Reactive material! Never clean any aluminum component or flush Nordson equipment with halogenated hydrocarbon fluids. Nordson melters and guns contain aluminum components that may react violently with halogenated hydrocarbons. The use of halogenated hydrocarbon compounds in Nordson equipment can cause personal injury, including death.
HM, CA	 WARNING: System pressurized! Relieve system hydraulic pressure before breaking any hydraulic connection or seal. Failure to relieve the system hydraulic pressure can result in the uncontrolled release of hot melt or cold adhesive, causing personal injury.
HM	 WARNING: Molten material! Wear eye or face protection, clothing that protects exposed skin, and heat-protective gloves when servicing equipment that contains molten hot melt. Even when solidified, hot melt can still cause burns. Failure to wear appropriate personal protective equipment can result in personal injury.
Continued...	

General Safety Warnings and Cautions (contd)

Table 1 General Safety Warnings and Cautions (contd)

Equipment Type	Warning or Caution
HM, PC	 WARNING: Equipment starts automatically! Remote triggering devices are used to control automatic hot melt guns. Before working on or near an operating gun, disable the gun's triggering device and remove the air supply to the gun's solenoid valve(s). Failure to disable the gun's triggering device and remove the supply of air to the solenoid valve(s) can result in personal injury.
HM, CA, PC	 WARNING: Risk of electrocution! Even when switched off and electrically isolated at the disconnect switch or circuit breaker, the equipment may still be connected to energized auxiliary devices. De-energize and electrically isolate all auxiliary devices before servicing the equipment. Failure to properly isolate electrical power to auxiliary equipment before servicing the equipment can result in personal injury, including death.
CA	 WARNING: Risk of fire or explosion! Nordson cold adhesive equipment is not rated for use in explosive environments and should not be used with solvent-based adhesives that can create an explosive atmosphere when processed. Refer to the MSDS for the adhesive to determine its processing characteristics and limitations. The use of incompatible solvent-based adhesives or the improper processing of solvent-based adhesives can result in personal injury, including death.
HM, CA, PC	 WARNING: Allow only personnel with appropriate training and experience to operate or service the equipment. The use of untrained or inexperienced personnel to operate or service the equipment can result in injury, including death, to themselves and others and can damage to the equipment.
Continued...	

Equipment Type	Warning or Caution
HM	 CAUTION: Hot surfaces! Avoid contact with the hot metal surfaces of guns, hoses, and certain components of the melter. If contact can not be avoided, wear heat-protective gloves and clothing when working around heated equipment. Failure to avoid contact with hot metal surfaces can result in personal injury.
HM	CAUTION: Some Nordson melters are specifically designed to process polyurethane reactive (PUR) hot melt. Attempting to process PUR in equipment not specifically designed for this purpose can damage the equipment and cause premature reaction of the hot melt. If you are unsure of the equipment's ability to process PUR, contact your Nordson representative for assistance.
HM, CA	CAUTION: Before using any cleaning or flushing compound on or in the equipment, read and comply with the manufacturer's instructions and the MSDS supplied with the compound. Some cleaning compounds can react unpredictably with hot melt or cold adhesive, resulting in damage to the equipment.
HM	CAUTION: Nordson hot melt equipment is factory tested with Nordson Type R fluid that contains polyester adipate plasticizer. Certain hot melt materials can react with Type R fluid and form a solid gum that can clog the equipment. Before using the equipment, confirm that the hot melt is compatible with Type R fluid.

Other Safety Precautions

- Do not use an open flame to heat hot melt system components.
- Check high pressure hoses daily for signs of excessive wear, damage, or leaks.
- Never point a dispensing handgun at yourself or others.
- Suspend dispensing handguns by their proper suspension point.

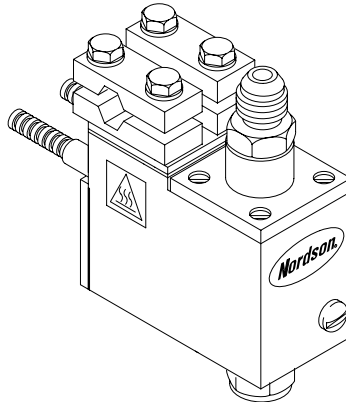
First Aid

If molten hot melt comes in contact with your skin:

1. Do NOT attempt to remove the molten hot melt from your skin.
2. Immediately soak the affected area in clean, cold water until the hot melt has cooled.
3. Do NOT attempt to remove the solidified hot melt from your skin.
4. In case of severe burns, treat for shock.
5. Seek expert medical attention immediately. Give the MSDS for the hot melt to the medical personnel providing treatment.

Description

The E700 gun is a flow-through design with optional 45° and 90° hose-to-gun connections. The gun is activated by either a 700 Series electric gun driver or by an E700 gun driver, which supplies a signal to the coil. Power to the heater, the resistance temperature device (RTD) signal and ground are through the hose-to-gun cordset. A separate two pin connector provides power from the driver to the coil. The lack of dynamic seals and the current-limited driver output can result in a service life exceeding 500 million cycles.



4207029

Figure 1 E700 Electric Gun

The E700 gun has been designed and tested for UL and TUV compliance. The 700 series driver may require the 700 series line filter kit for CE compliance.

NOTE: Use E700 guns only for the application of hot melt material. Material viscosity and temperature range must be within the gun specifications.

Performance

E700 guns can operate at speeds up to 3,000 cycles per minute with conventional hot melt adhesives. The ball and seat design assures clean cut-off at the nozzle. E700 guns permit control of gun temperature within 0.5 °C (1 °F) of set point. Durations as low as 2 ms are possible in adhesive with viscosity below 1,000 Cps.

The RTD-based guns are equipped with quick disconnecting electrical plugs and a two-piece bracket for easy installation and maintenance. The use of an inline filter can further reduce maintenance down-time. With only two moving parts, the guns will operate maintenance free in properly maintained adhesive systems.

Nozzle Variety/Versatility

Nordson manufactures a family of precision nozzles in a wide variety of multi-orifice and multiple engagement designs. The longer engagements allow higher hydraulic pressure operation, thereby providing excellent cut-off both in pattern and dot applications such as packaging adhesives. The E700 gun can use a wide variety of multi-orifice nozzles. Pattern accuracy and cutoff improve at Nordson's higher operating pressures.

Specifications

This section provides specifications for the E700 gun, 700 series driver and E700 driver.

E700 Gun

Parameter	Specification
Maximum working hydraulic pressure	1500 psi (10.34 MPa)
Working viscosity ¹	4500 Cps
Speed ^{1,2}	Up to 5000 cpm
Electrical connection	Quick disconnect
Maximum operating temperature	190 °C (375 °F)
Heating method	Replaceable cartridge heater
Electrical requirements	240 VAC, 50/60 Hz
Temperature sensing	Replaceable RTD
Nozzle diameter range ³	0.2 mm to 0.6 mm (0.0008 in. to 0.024 in.)

NOTES:

1. Performance will be affected by higher viscosity adhesives. The maximum recommended viscosity is 4500 cps. Higher cycle rates will reduce coil life. Two millisecond or less durations are possible only at or below 1000 Cps.
2. Cycle rates greater than 3000 cpm will result in the coil overheating and excessive heat build-up in the driver.
3. 232 XXX and 220 XXX series domed nozzles, right angle adapters and extensions purchased separately.

700 Series Driver

The 700 series driver provides highly controlled output with keypad data entry, diagnostics and bead durations down to 2 msec. It has been tested to UL and TUV standards and is required for CE compliance on OEM equipment. Minimum input line voltage requirement is 200 VAC.

Parameter	Specification
Capacity	2 channels, 3 modules each
Driver electrical service	240 VAC, 50/60 Hz
Maximum power requirement	440 watts
Trigger source options	24 VDC recommended
Length of gun-to-driver cordset	10 ft standard (extensions available)
Enclosure rating	Meets IP54 requirements

E700 Driver

The E700 driver has a transformer-based power supply and provides a minimum bead of 5 ms minimum duration. The E700 driver can operate on 120 VAC or 240 VAC input.

CAUTION: Failure to observe gun trigger frequency derating (Maximum gun trigger frequency) will result in failure of the driver card.

Parameter	Specifications
Maximum gun trigger frequency ¹	1 gun – 50 Hz 2 guns – 40 Hz 3 guns – 30 Hz ² 4 guns – 20 Hz ²
Maximum gun duty cycle	99%
Driver electrical service	240 VAC, 50/60 Hz, 1Ø, 1 A
Input terminal block wire	#14–22 AWG
Ambient temperature range	0–50 °C (32–120 °F)
DC trigger source	9 – 35 VDC @ 15 mA
AC trigger source	Not recommended
Contact closure trigger source	Switch relay suitable for dry circuit operation. Switched current – approx. 4.0 mA. Switched voltage – approx. 24 VDC.
NOTES: 1. Failure to observe gun trigger frequency rating will result in failure of the driver. 2. The two channels will operate up to two guns per channel. Certain viscosity and cycle rate restrictions may apply. Rated for 2 guns @ 2400 cpm in 1200 Cps material and 375 °F.	

Installation



WARNING: Allow only personnel with appropriate training and experience to operate or service the equipment. The use of untrained or inexperienced personnel to operate or service the equipment can result in injury, including death, to themselves and others, and damage to the equipment.

Unpacking and Inspection

After unpacking the E700 guns, inspect the following:

- E700 gun surfaces for evidence of dents, scratches, corrosion, and other physical damage. Contact a Nordson representative if there is any physical damage.
- the service block air and fluid ports for foreign material. Remove all foreign material.
- all fasteners for tightness. Tighten any loose fasteners.

Overview

The E700 gun may be mounted to extrude material in any direction required. The E700 gun may be mounted to the parent machine using the mounting clamp that is secured to the E700 gun body. An insulator located between the mounting block and the body thermally insulates the E700 gun from the mounting bars.

NOTE: Position the E700 gun as close to the substrate as the application allows to achieve the best accuracy in placement and reduced tailing.

Observe the following tips for the best and most consistent performance:

- Protect the E700 gun mount from vibration and secure it so the E700 gun will not change position during application.
- Install an unheated in-line filter between the E700 gun and hose.
- Install insulation over the hose-to-gun fittings.
- Select a nozzle design that will operate above 350 psi (hydraulic).

Required Items

Have the following items readily at hand prior to installation:

- melter and associated equipment technical manuals
- safety goggles
- safety gloves
- long-sleeve protective clothing
- wrenches; refer to Table 2
- bar stock, 13 mm ($1/2$ in.) diameter
- Nordson automatic gun hose (one per gun)
- Never-Seez or equivalent
- drain pan

Table 2 Wrench Sizes Needed to Install Guns

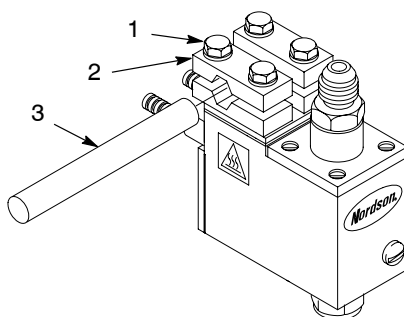
Component	Item	Wrench Size
Gun	Clamp hex head screws	13 mm ($1/2$ in.)
	Male gun fitting (to hose)	18 mm ($11/16$ in.)
Hose, I.D. 8 mm ($5/16$ in.)	Hose fitting	16 mm ($11/16$ in.)
Hose, I.D. 16 mm ($5/8$ in.)	Hose fitting	32 mm (1 $1/4$ in.)
	Connector, hose to gun fitting	

Installing a New Gun on a New System

Use this procedure to install a new E700 gun on a new melter in which no adhesive has been melted. If you are replacing a used E700 gun, go to *Replacing an E700 Gun*.

Mounting the E700 Gun

1. Disconnect and lock out input power to the system.
2. Use a 13 mm ($1/2$ in.) wrench to loosen the hex head screws and the E700 gun mounting clamp.
3. Mount the E700 gun on a 13 mm ($1/2$ in.) diameter bar.
4. Tighten the mounting hex head screws.
5. Secure the mounting bar to the parent machine so that there is no E700 gun movement.



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Figure 2 Mounting the E700 Gun Using the Mounting Clamp

1. Hex head screws
2. Gun mounting clamp
3. 13 mm ($1/2$ in.) diameter bar

Installing the Hose – Vertical Connection

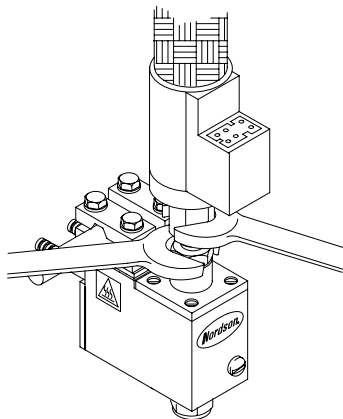


WARNING: This equipment contains energized electrical components that could be fatal. **DO NOT** electrically connect the hose to the melter at this time. Always connect the tank and E700 gun hydraulically before making the electrical connections. Connect input power at the appropriate point as described in the melter service manual.

The hose may be connected to the E700 gun either horizontally or vertically. Follow this procedure to connect the hose vertically:

NOTE: Insulate the fittings that connect the hose to the E700 gun. The installation kit has a cuff included in the kit. Refer to *Parts*.

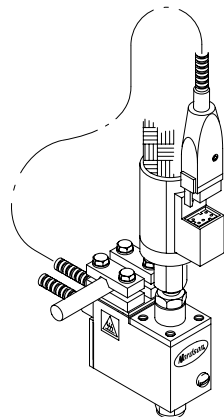
1. See Figure 3. Connect the hose to the male hose connection on the top of the E700 gun.



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Figure 3 Connecting Hose to the Gun Vertically

2. See Figure 4. Electrically connect the hose to the E700 gun by connecting the plug on the E700 gun to the hose receptacle.



4207020

Figure 4 Connecting the Hose-to-Gun Electrical Connector – Vertical Mount

Installing the Hose – Vertical Connection(contd)

CAUTION: Hot melt hoses should not be placed inside of any closed cover where hose heat cannot dissipate. Hose failure may result.

CAUTION: Hot melt hoses should not be secured or supported such that the hose has a large surface area in contact with a cold floor, cold steel, angle iron or other cold material. Poor hose performance could occur.

3. Mechanically connect the hose to the melter in accordance with the melter manual.

Installing the Hose – Horizontal Connection

If connecting the hose horizontally, use the following procedure to replace the straight connection fitting with a 45° or 90° elbow:

NOTE: Insulate the fittings that connect the hose to the E700 gun. The installation kit has a cuff included in the kit. Refer to *Parts*.

1. Remove the straight fitting from the top of the E700 gun.

CAUTION: DO NOT use extra fittings or nipples to connect the E700 gun to the hose. A cold connection may result.

2. Inspect and clean the O-ring and threads for dirt or other foreign particles.
3. Lubricate the elbow fitting threads and O-ring with a small amount of PTFE paste.
4. Thread the fitting by hand into the threaded port in the E700 gun.
5. Tighten the fitting to 10–14 N•m (7–10 ft•lbs) of torque.

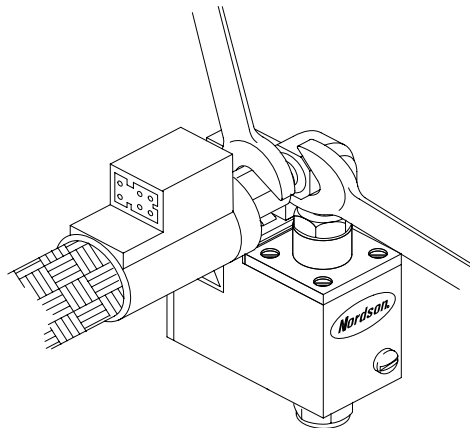
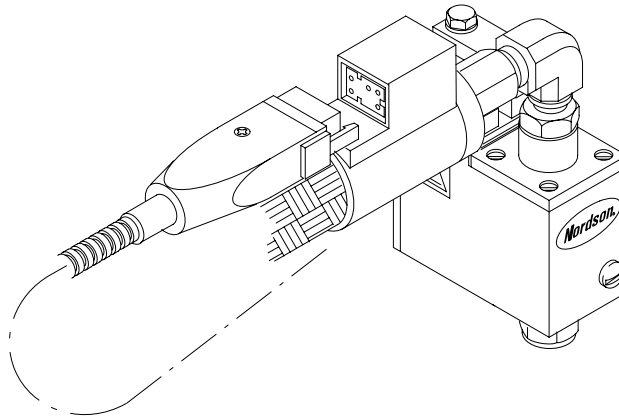


Figure 5 Connecting the Hose to the E700 Gun – Horizontal Connection

6. Electrically connect the hose to the E700 gun by connecting the plug on the E700 gun to the hose receptacle.



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Figure 6 Connecting the Hose-to-Gun Electrical Connector – Horizontal Connection

7. Mechanically connect the hose to the melter in accordance with the melter manual.

CAUTION: Hot melt hoses should not be placed inside of any closed cover where hose heat cannot dissipate. Hose failure may result.

CAUTION: Hot melt hoses should not be secured or supported such that the hose has a large surface area in contact with a cold floor, cold steel, angle iron or other cold material. Poor hose performance could occur.

Replacing an E700 Gun

Relieving Hydraulic Pressure



WARNING: System or material pressurized. Relieve pressure. Failure to observe may result in serious burns.

1. Make sure the system is at operating temperature.
2. Relieve pump hydraulic pressure as described in the *Safety* section.



WARNING: Hot! Risk of burns. Wear heat-protective gloves.

3. Shield the area and operator.
4. Trigger all E700 guns to relieve any trapped hydraulic pressure.
5. Place a drain pan under the drain valve of the melter.

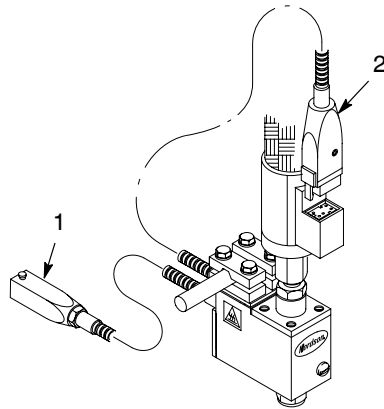
Relieving Hydraulic Pressure(contd)

CAUTION: Equipment damage can occur if the melter drain valve is turned with anything other than a screwdriver.

6. Open the drain valve and allow adhesive to drain from the manifold. Close the drain valve. Properly dispose of the drained adhesive.

Removing the Old Gun

1. Disconnect and lockout all external power sources before removing the E700 gun.
2. Disconnect and lock out the input power line to the melter.
3. Unplug the hose and trigger electrical connections from the E700 gun. Wipe off any adhesive from the gun fittings.

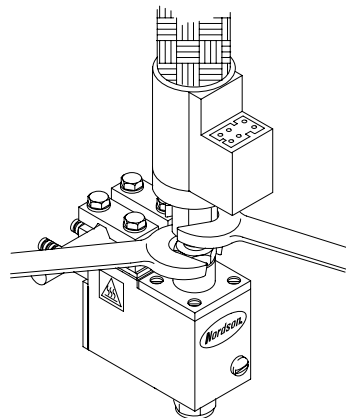


4207021

Figure 7 Unplugging the Hose and Trigger Electrical Connectors

1. Trigger connector
2. Hose connector

4. Use two wrenches to remove the hose swivel fitting from the E700 gun fitting. Remove the hose.



4207019

Figure 8 Disconnecting the Hose From the E700 Gun

5. Use a 13 mm ($1/2$ in.) wrench to loosen the hex head screws and the E700 gun mounting clamp.

6. Remove the E700 gun from the 13 mm ($1/2$ in.) diameter bar.

NOTE: If there are other E700 guns mounted on the same bar, take the E700 gun off the bar by removing the clamp hex head screws.

7. Dispose of the old E700 gun.

Mounting the Replacement Gun

1. Use a 13 mm ($1/2$ in.) wrench to loosen the four hex head screws on the clamp of the new E700 gun.
2. Slide the clamp onto the 13 mm ($1/2$ in.) diameter bar.
3. Tighten the clamp hex nut and screws by hand until they are finger tight.
4. Ensure that the mounting bar is tightened in its mount so there will be no E700 gun movement.
5. Slightly loosen the E700 gun clamp nut and screws and move the E700 gun to the desired position.
6. Use a 13 mm ($1/2$ in.) wrench to securely tighten the hex head screws.
7. Thread the hose swivel fitting onto the E700 gun male fitting until the connection is finger tight.
8. Use two wrenches (refer to Table 2) to attach the hose swivel fitting to the E700 gun fitting. Tighten to 10–14 N•m (7–10 ft•lbs). **Do not overtighten.**
9. Plug the E700 gun electrical connection into the hose plug receptacle. Connect the trigger connector from the E700 gun to its mating connector.

Checking for Leaks

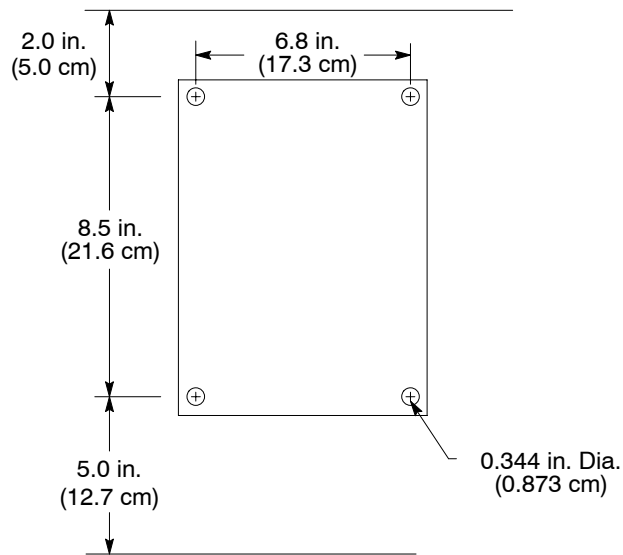
1. Restore electrical power to the melter.
2. Follow the start up procedure in the melter manual. Allow the melter and hose to reach operating temperature.
3. Check for low pressure leaks between the hose fitting and the E700 gun fitting.
4. If leaking, disconnect and lockout all external power sources.
5. Relieve system pressure.
6. Unplug the hose and trigger electrical connections from the E700 gun.
7. Use two wrenches (refer to Table 2) to attach the hose swivel fitting to the E700 gun fitting. Tighten to 10–14 N•m (7–10 ft•lbs). **Do not overtighten.**
8. Plug the E700 gun electrical connection into the hose plug receptacle. Connect the trigger connector from the E700 gun to its mating connector.
9. Remove the lockout and restore power.
10. Resume normal operation.

700 Series Driver Installation

Mounting

The 700 series electric gun driver must be installed in a vertical position with the heatsink fins running up and down. The Nordson logo must be visible in the upper left corner of the unit. Allow at least five inches of clearance below the unit and two inches above it. Mounting holes are provided and may be used to mount the unit to a wall.

CAUTION: Do not mount the 700 series electric gun driver differently from the method described above. Mounting the gun driver either laterally or with the keypad facing up will channel heat through the electronics and shorten component life. Failure to observe may result in equipment damage.



4204095A

Figure 9 Mounting Template

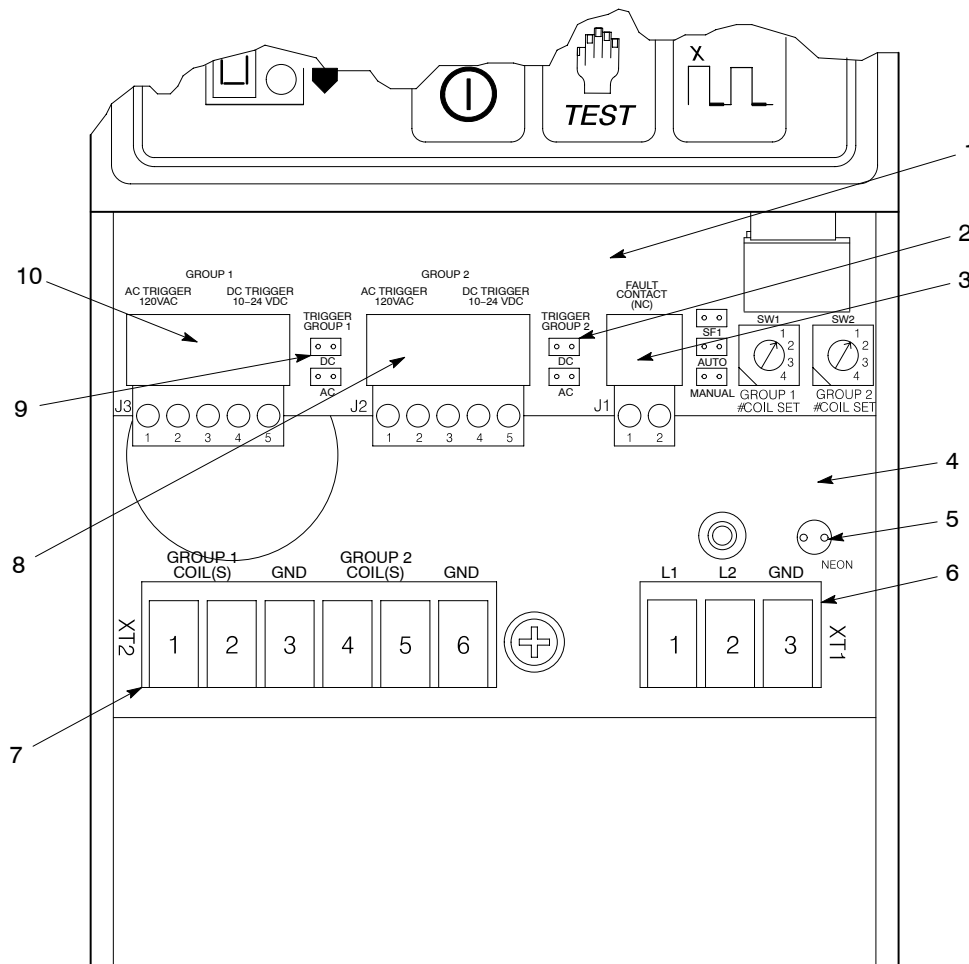
Connecting Plugs and Wires



WARNING: Always make sure that the power is disconnected prior to connecting or disconnecting any wires. Failure to do so may result in injury, death, or equipment damage.

All installation connections are accessed by removing the access panel located below the keypad. Unscrew the two screws located on the bottom, and remove the access panel.

Make sure all power is off before connecting any wires.

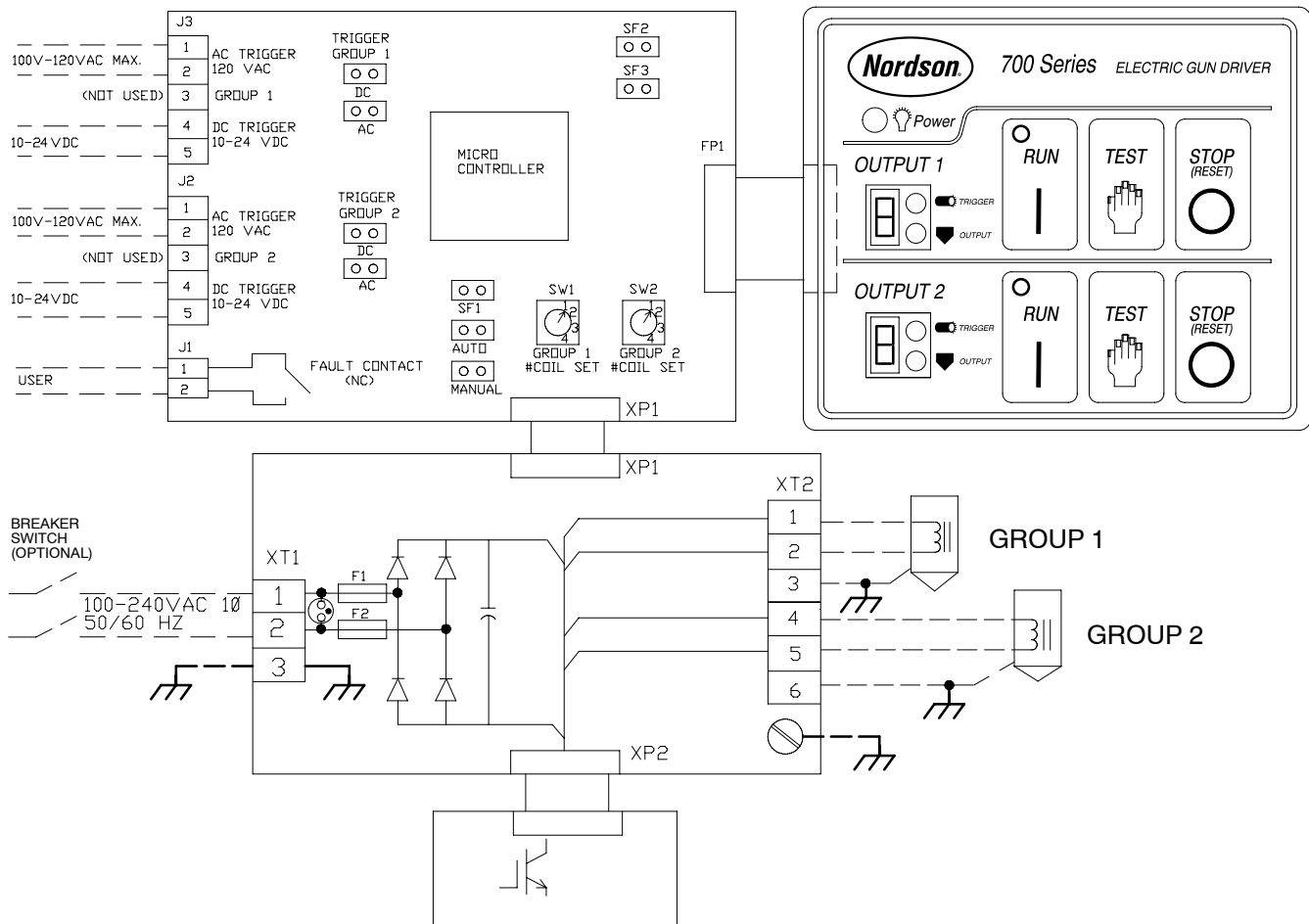


4204160A

Figure 10 Connection Diagram

- | | | |
|--------------------------------|--|---|
| 1. Micro-controller board | 5. Neon lamp – input voltage indicator | 8. J2 trigger signal input for group 2 |
| 2. Trigger group 2 jumper type | 6. XT1 AC line voltage input | 9. Trigger group 1 jumper type |
| 3. J1 fault contact (NC) | 7. XT2 coil voltage outputs | 10. J3 trigger signal input for group 1 |
| 4. Power supply board | | |

Connecting Plugs and Wires (contd)



4204162

Figure 11 Wiring Diagram

Connecting the Power Supply

The universal power supply provides isolation from the line input for the micro-controller board. The micro-controller board and the membrane keypad are isolated from the line input. Care must be taken when the 120 VAC trigger signal is connected to the J2 or J3 terminal block. The main controller is isolated from 120 VAC, but the board section surrounding J2 and J3 will be at 120 VAC potential.

The 700 series electric gun driver includes a neon lamp that indicates the presence of power on terminal block XT1, and is visible when the access panel is removed. See Figure 11 for the location of neon lamp. This neon lamp is connected in parallel with the line input terminal block, and before the fuses. Whether or not the fuses are open, the neon lamp should be on whenever power is present.



WARNING: Always make sure that the power is disconnected prior to connecting or disconnecting any wires. Failure to do so may result in injury, death, or equipment damage.

To connect the power supply (see Figure 11):

1. Locate terminal block XT1 on the right side of the power supply board.
2. Feed the power supply wires through the input power supply knockout and connect to XT1-1 and XT1-2.
3. Connect the line input ground wire to terminal XT1-3.

Connecting Gun Wires

To connect gun wires:

1. Locate terminal block XT2 on the left side of the power supply board. See Figure 11.
2. Feed the gun wires through the input power supply knockout.
3. Connect Group 1 gun wires to XT2-1 and XT2-2.
4. Connect Group 2 (if applicable) gun wires to XT2-4 and XT2-5.



WARNING: Ground the gun properly to avoid potential shock hazard. Failure to do so may result in injury, death, or equipment damage.

5. Connect the gun assembly ground wires to the grounding terminals XT2-3 and XT2-6.

Connecting Trigger Signals

Locate the 5-position connectors J2 and J3 on the micro-controller board. See Figure 10.

Table 3 Connecting Trigger Signals

Type of Signal	Procedure
AC trigger signals	1. Connect the signal wires for group 1 through the trigger input knockout and across J3-1 and J3-2. 2. Connect AC trigger signal wires for group 2 through the trigger input knockout and across J2-1 and J2-2.
DC trigger signals	1. Connect the signal wires for group 1 through the trigger input knockout and across J3-4 and J3-5. 2. Connect the signal wires for group 2 through the trigger input knockout and across J2-4 and J2-5. (Notice that pin 1 on each connector is the first pin located toward the left side of the board.)
NOTE: There is no need to observe polarity of the DC trigger connection.	

Connecting the Fault Relay Contact (Optional)

The normally-closed fault relay contact is intended for external connection to a user-supplied device. When power is removed or a fault is detected, the contact opens. To use the normally closed fault contact, connect to J1, pins 1 and 2, on the micro-controller board. See Figure 10. The fault relay contact is rated for a maximum of 6 A at 125 VAC or 30 VDC.

Connecting the External Switch (Optional)

An optional double-pole, double-throw (DPDT) external switch with a minimum contact rating of 250 VAC, 6 Amps may be installed. The switch must be installed such that upon disconnection, both input power lines are disconnected.

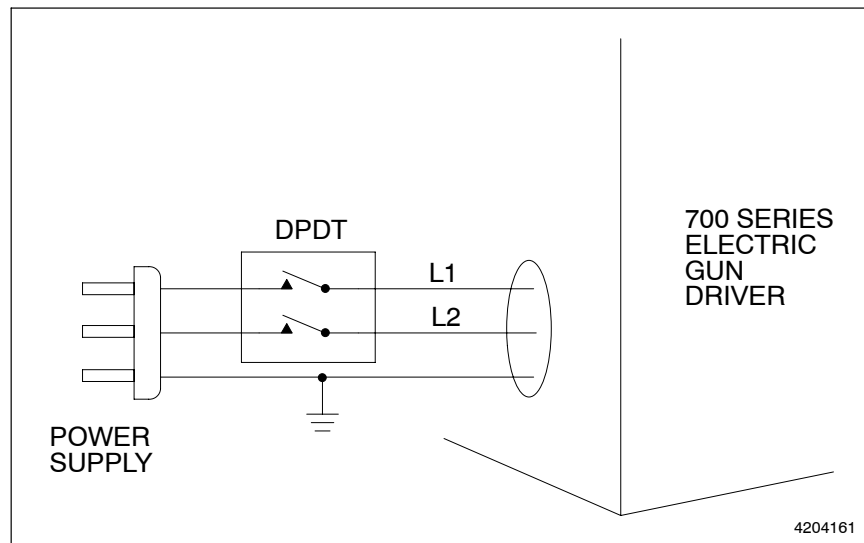


Figure 12 DPDT External Power Switch

E700 Driver Installation



WARNING: Allow only personnel with appropriate training and experience to operate or service the equipment. The use of untrained or inexperienced personnel to operate or service the equipment can result in injury, including death, to themselves and others, and damage to the equipment.

The E700 gun driver provides two independent gun channels. The driver transformer converts 115/240 VAC to the appropriate gun signal. By providing a high voltage initial signal and dropping to a controlled holding current, the driver provides rapid response and accurate patterns without heat buildup.



WARNING: Disconnect and lockout external power source before connecting power leads to terminals. Failure to observe may result in personal injury or death.

1. Secure the driver enclosure to a platform within 10 feet of the guns.

NOTE: When placing the driver, allow clearance for opening the enclosure lid. See Figure 13 for enclosure dimensions.

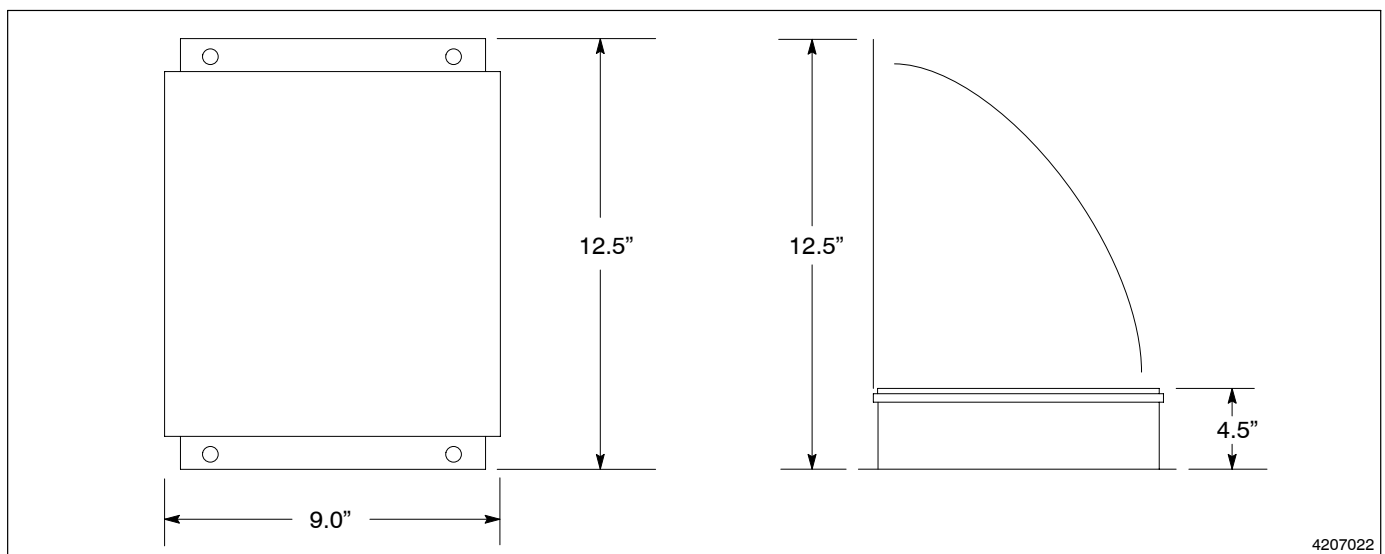


Figure 13 E700 Driver Enclosure Dimensions

2. Open the enclosure lid and locate the red SW1 switch. The driver comes set for single phase 240 VAC input voltage. If using 115 VAC, push the switch up before connecting power to the driver. The operating mode is visible on the face of the switch.

E700 Driver Installation *(contd)*

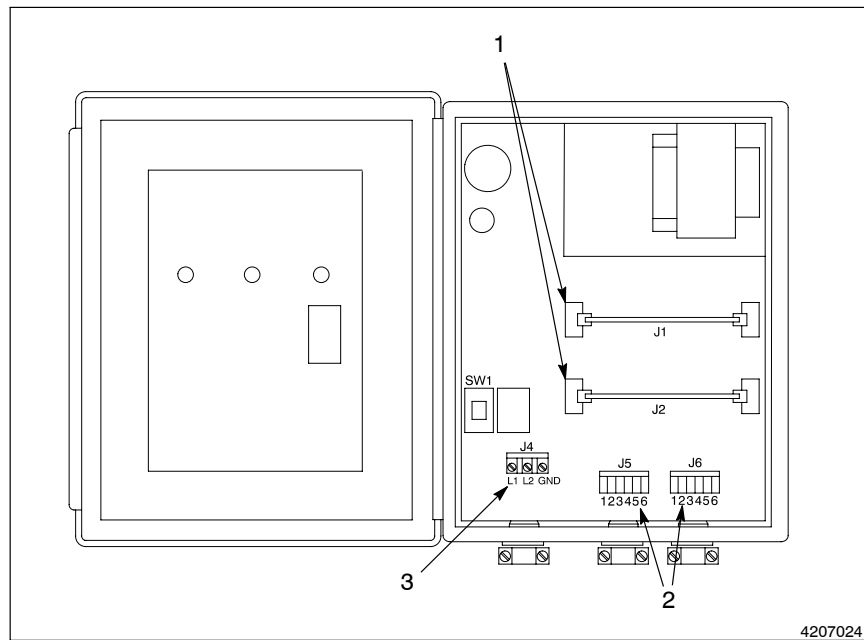


Figure 14 E700 Driver Enclosure

11. Driver boards

13. Input terminal block

12. Input/Output terminal blocks

3. Locate the J4 terminal block. This is a two-part terminal block. Pull apart and connect power leads to terminals L1, L2 and ground. Snap the terminal block back in position.
4. Connect the timer signal to positions 5 and 6 on the input/output terminal block (J5 and J6). Each terminal block accepts an independent timer signal.
5. Using the gray, two-pin interconnect cord, connect the gun to the input/output terminal block. If two guns are used with the same adhesive pattern (timer signal), connect the first gun's leads to J5-1 and J5-2 and the second to J5-3 and J5-4. For two guns providing different adhesive patterns (timer signals), connect one gun (positions 1 and 2) and one timer signal (positions 5 and 6) to each terminal block.
6. Remove and set the driver boards for the number of guns and type of timer signal.
 - The driver board in the J1 PC board edge connector controls the guns connected to the J5 input/output terminal block.
 - The driver board in the J2 PC board edge connector controls the guns connected to the J6 input/output terminal block.
7. There are three (3) switches that must be set on each driver board. Refer to Table 4 for the current settings information.

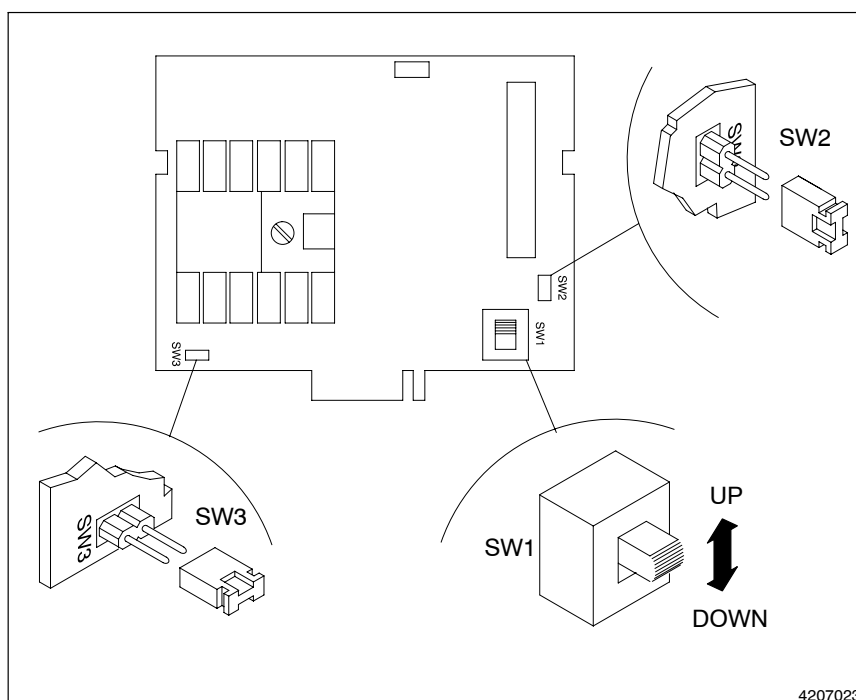


Figure 15 E700 Driver Board Switch Settings

Table 4 Driver Board Settings (Version D and earlier)

Timer Signal Type	AC Voltage	DC Voltage	Switch Closure
SW1 Position	Up	Up	Down
SW2 Position	Header on	Header off	Header off
SW3 – Single gun	Header offset		
SW3 – Two guns	Header on		

- Complete the driver installation by connecting the 10 foot interconnect cord (gray, with quick-disconnect fittings) to the gun coil cordset.

Flushing the Gun

The E700 gun should be flushed before use.

- Install the gun driver. Refer to the appropriate procedure.
- Restore electrical power to the melter.
- Follow the start up procedure in the melter manual. Bring the system to operating temperature.
- Remove the nozzle.
- Trigger the E700 gun to dispense adhesive into a waste container until the adhesive dispensed is clean.
- Reinstall nozzle.
- Resume normal operation.

Maintenance



WARNING: Allow only personnel with appropriate training and experience to operate or service the equipment. The use of untrained or inexperienced personnel to operate or service the equipment can result in injury, including death, to themselves and others, and damage to the equipment.

Preventive maintenance procedures for Nordson E700 guns consist of periodic inspections, cleaning, and material changeover. Service kits are listed in *Parts*.

Maintenance Activity	Daily	Monthly	As Needed*
Clean the outside surfaces of the gun	X		
Check for leaks		X	X
Check the modules for foreign material		X	X
Clean nozzles			X
NOTE: Extra maintenance may be required for continuous duty operations.			

Maintenance Procedures

Use the following procedures to maintain an E700 electric gun.

Gun Inspection



WARNING: Risk of electrical shock. Failure to disconnect and lock out power may result in personal injury, death, or equipment damage.

1. Lock out external power to the gun.
2. Loosen the electrical cover screws.
3. Remove the cover.
4. Inspect all wiring for signs of wear or other damage to the insulation.



WARNING: Risk of electric shock or equipment damage. Vibration, plus heating and cooling cycles, can loosen connections. Check all electrical connections for tightness by following the *Gun Inspection* instructions in this section.

5. Check all electrical connections for tightness.

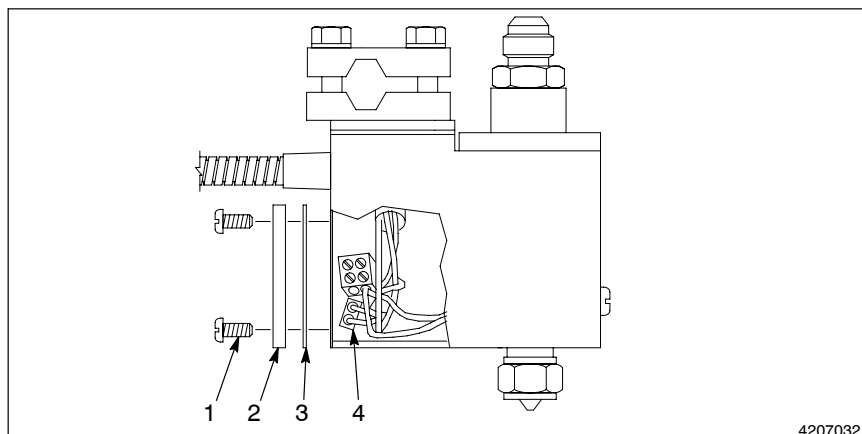


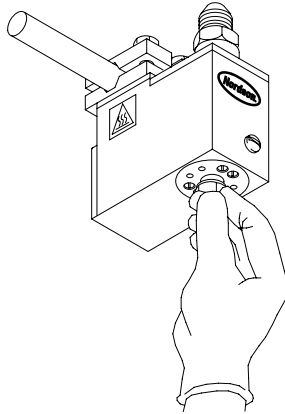
Figure 16 Checking the Gun Wiring

- | | |
|-----------------------------|----------------------------|
| 1. Fillister head screw (4) | 3. Electrical cover gasket |
| 2. Electrical cover | 4. Electrical wires |

Nozzle Cleaning

Gun nozzles may become clogged when char, a by-product of overheating the hot melt, becomes lodged in the nozzle.

1. Heat the system to operating temperature.
2. Relieve system pressure and disable the gun. Refer to *Safety*.
3. Use a 13 mm ($1/2$ in.) wrench to loosen the nozzle, and remove.



4207026

Figure 17 Removing the Nozzle

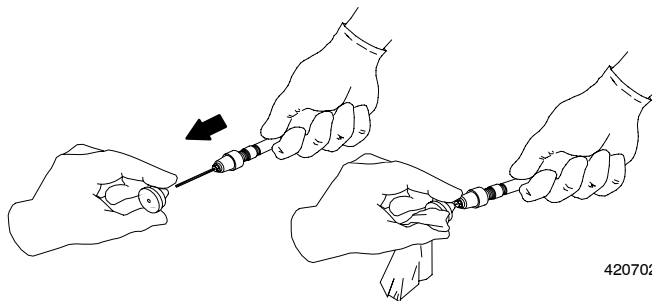


WARNING: Fire hazard. Do not heat Nordson Type R fluid above 245 °C (475 °F). Use only an industrial grade, regulated, electrical heating device that is designed to heat industrial fluids. Personal injury or property damage can result if Type R cleaning fluid is heated with an open flame or in an unregulated heating device.

4. Soak the nozzles in Nordson Type R cleaning fluid that has been heated above the melting point of the hot melt.

CAUTION: Use only a pin-type probe to clean the nozzles.

5. Clean the nozzle bore by using a correctly sized pin-type probe. The Nordson nozzle cleaning kit (refer *Parts*) includes the holder and a variety of probes.



4207028

Figure 18 Cleaning the Nozzle with a Pin Probe

6. Reassemble the nozzle on to the E700 gun.
7. Restore the system to normal operation by following the start up procedures in the melter manual.

Troubleshooting



WARNING: Allow only personnel with appropriate training and experience to operate or service the equipment. The use of untrained or inexperienced personnel to operate or service the equipment can result in injury, including death, to themselves and others, and damage to the equipment.

The troubleshooting procedures in this section cover only the most common problems that may be encountered. This section also contains diagnostic procedures for use during troubleshooting. If problems cannot be solved with the information given here, contact a Nordson representative for help.

Adhesive Application Problems

Since the solenoid plunger is immersed in the adhesive, the viscosity affects the lead, lag and sometimes the quality of the bead. Check the tank, hose and gun temperatures. Table 5 encompasses a large percentage of Nordson's equipment. The table reflects MSDS information on file with Nordson and is intended to point out the viscosity/temperature relationship for various adhesives. Contact the local representative for current data sheets and recommended operating temperatures. The recommended application temperature for the adhesives is 350 °F.

Table 5 Adhesive Viscosity Versus Temperature Examples

Manufacturer	Adhesive	Viscosity CPS, Brookfield				
		300 °F	325 °F	350 °F	375 °F	400 °F
H. B. Fuller	2055	2200	—	1000	—	520
	1183	2300	—	970	—	550
	1662	2063	—	960	—	—
	2048	2500	—	1015	—	550
	2155	2200	—	1000	—	525
National	34-2876	2800	1800	1200	—	—
	34-2950	2450	1750	1250	—	—
	34-2849	2500	1650	1100	—	—
	34-2952	1500	1000	700	—	—
	34-2883	3000	1900	1250	850	—
Swift	80625	2975	2036	1300	1050	740
	84021	960	830	570	—	—
	84116	—	1000	700	—	—
Eastman	A-3	4100	2800	2000	1400	—

Gun Problems

Table 6, *Troubleshooting Guide*, lists typical gun faults, their probable causes, and what corrective action to take.

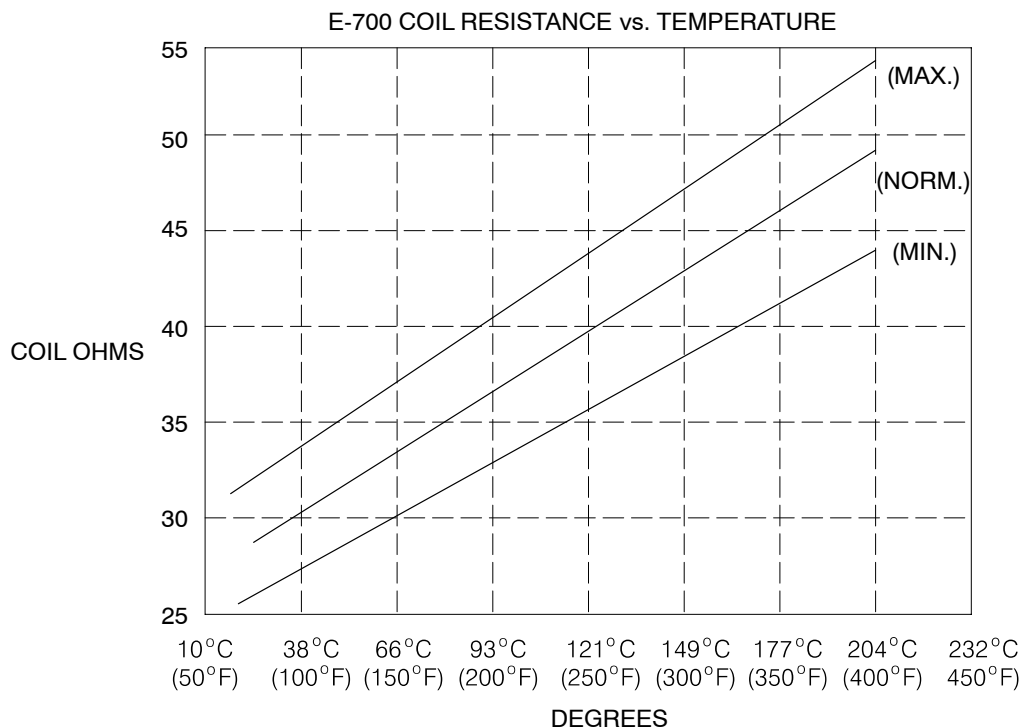


WARNING: Due to dangerous electrical potentials, all gun heater and gun RTD voltage and resistance measurements must be made using the Nordson hose/gun diagnostic device. Refer to *Parts*.

Table 6 Troubleshooting Guide

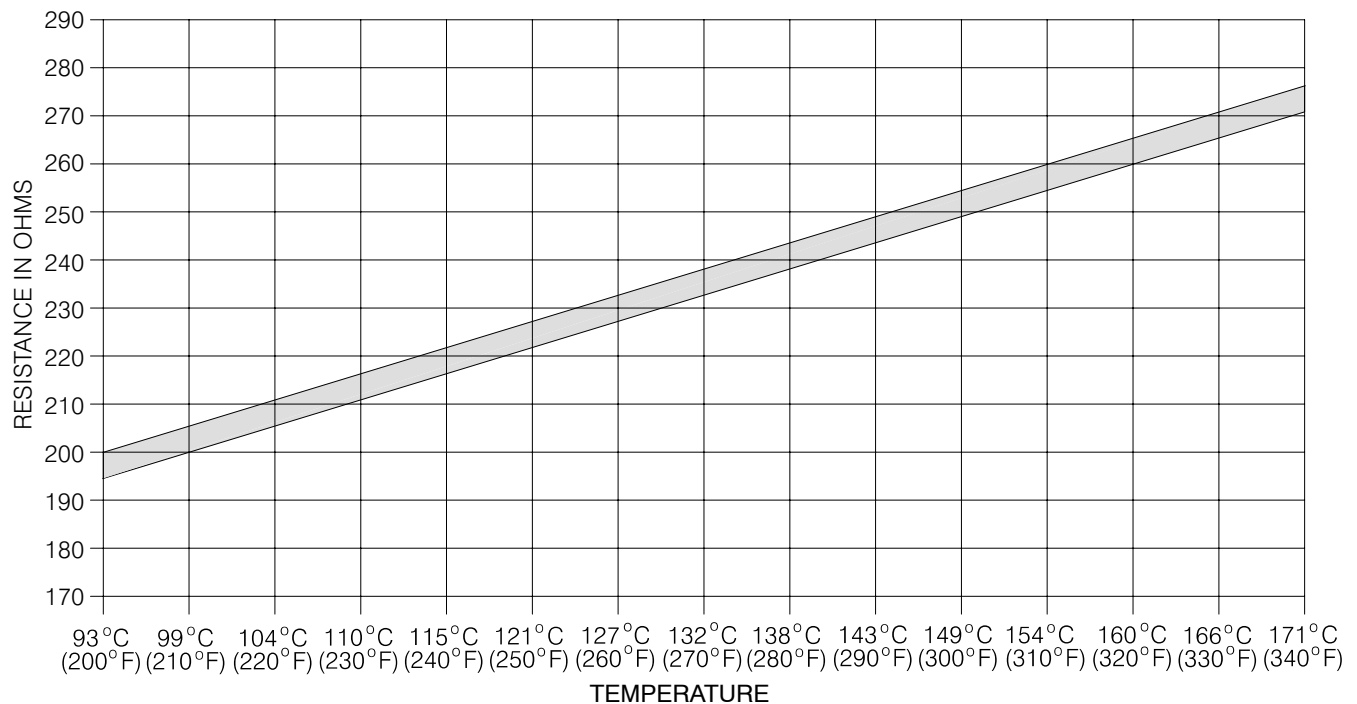
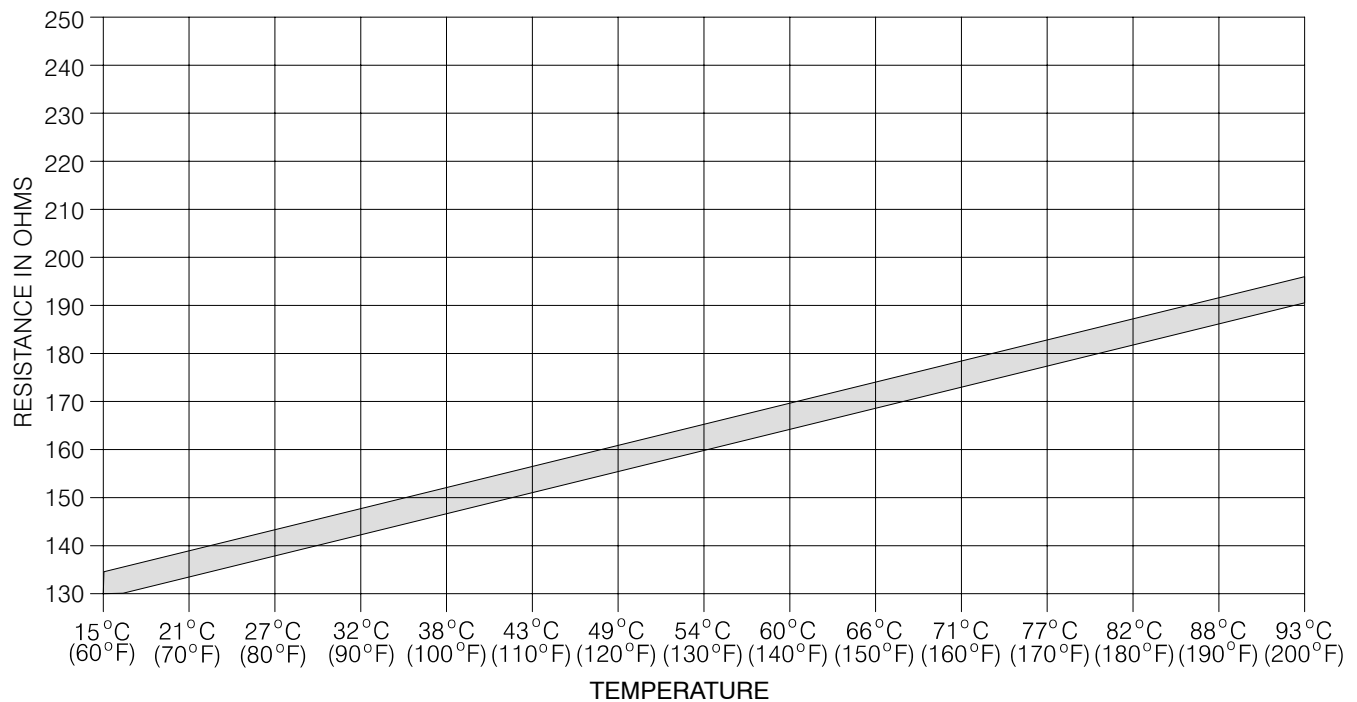
Problem	Possible Cause	Corrective Action
1. No adhesive flow	Adhesive level low No input power melter, hose and/or gun temperature setting too low System not at operating temperature Air pressure to pump off or low (piston pump) melter motor not operating (gear pump) Hose clogged Nozzle clogged Gun coil faulty	Add adhesive. Connect power. Make sure that all circuit breakers are switched on. Adjust (refer to melter manual) Make sure the READY light is on and allow unit to reach operating temperature. Restore or adjust. Verify motor operation (refer to the melter manual). Clean or replace (refer to hose manual). Clean nozzles or replace (refer to <i>Nozzle Operational Check</i> in this section). Check the resistance of the gun coil and compare it to the values in Figure 19.
2. Gun fails to heat or underheats	No power or low line voltage Temperature setting too low Failed heater cartridge (open or shorted) Failed RTD (open or shorted)	Make sure that input power is connected and all circuit breakers switched ON. Check voltage at unit input and gun output. Adjust. Test resistance. Replace if defective. Check continuity and resistance (see Figure 20). Replace if defective.
Continued...		

Problem	Possible Cause	Corrective Action
3. Gun overheats	Melter, hose controller or gun controller temperature setting too high Shorted RTD (unit should shut down)	Adjust (refer to melter manual) Test the RTD using the Nordson hose/gun diagnostic device. Replace if defective (Section 6).
4. Gun fails to close	Debris or contamination in seat Damaged return spring Electrical leakage in timing device Pressure or viscosity exceeding recommendation	Disassemble the pole piece assembly and clean it. Replace. Use an oscilloscope to check the timer signal output (output constantly on). Verify the viscosity and pressure; correct as needed.
5. Gun closes prematurely	Low input voltage to gun driver Incorrect gun driver setting Timer signal failing	Verify the cause of low input voltage and correct it. Check settings. (Refer to gun driver manual.) Refer to the timer manual.



4207042

Figure 19 Gun Coil Resistance Versus Temperature Chart

Gun Problems (contd)

4207045

Figure 20 RTD Resistance Versus Temperature

Wiring Diagrams

This section provides wiring diagrams and schematics that may be helpful during setup and repair of the E700 electric gun.

E700 Gun Wiring Diagram

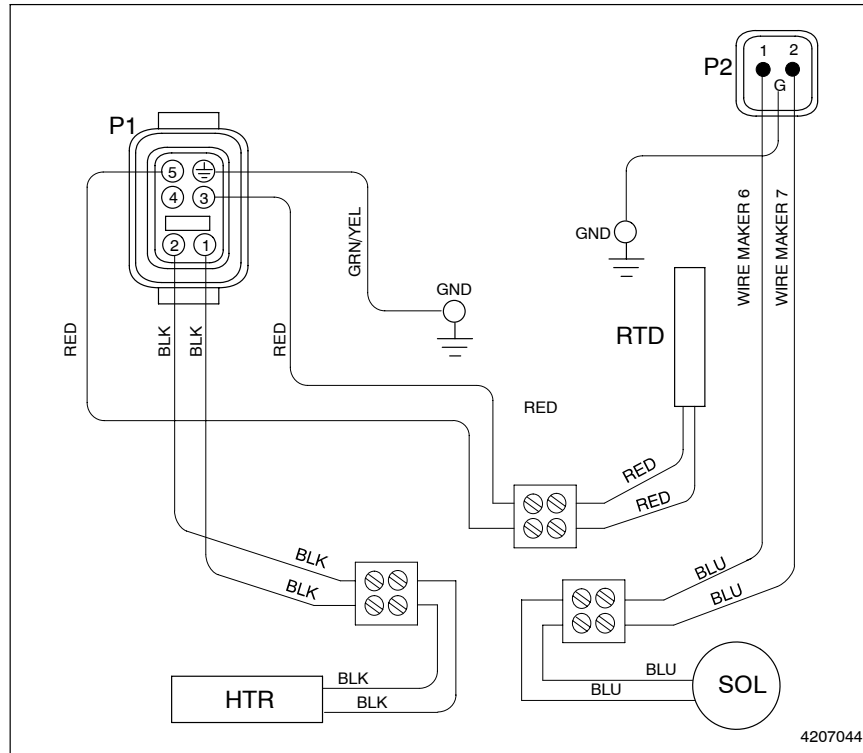


Figure 21 E700 Gun Wiring Diagram

700 Series Gun Driver Wiring Diagram

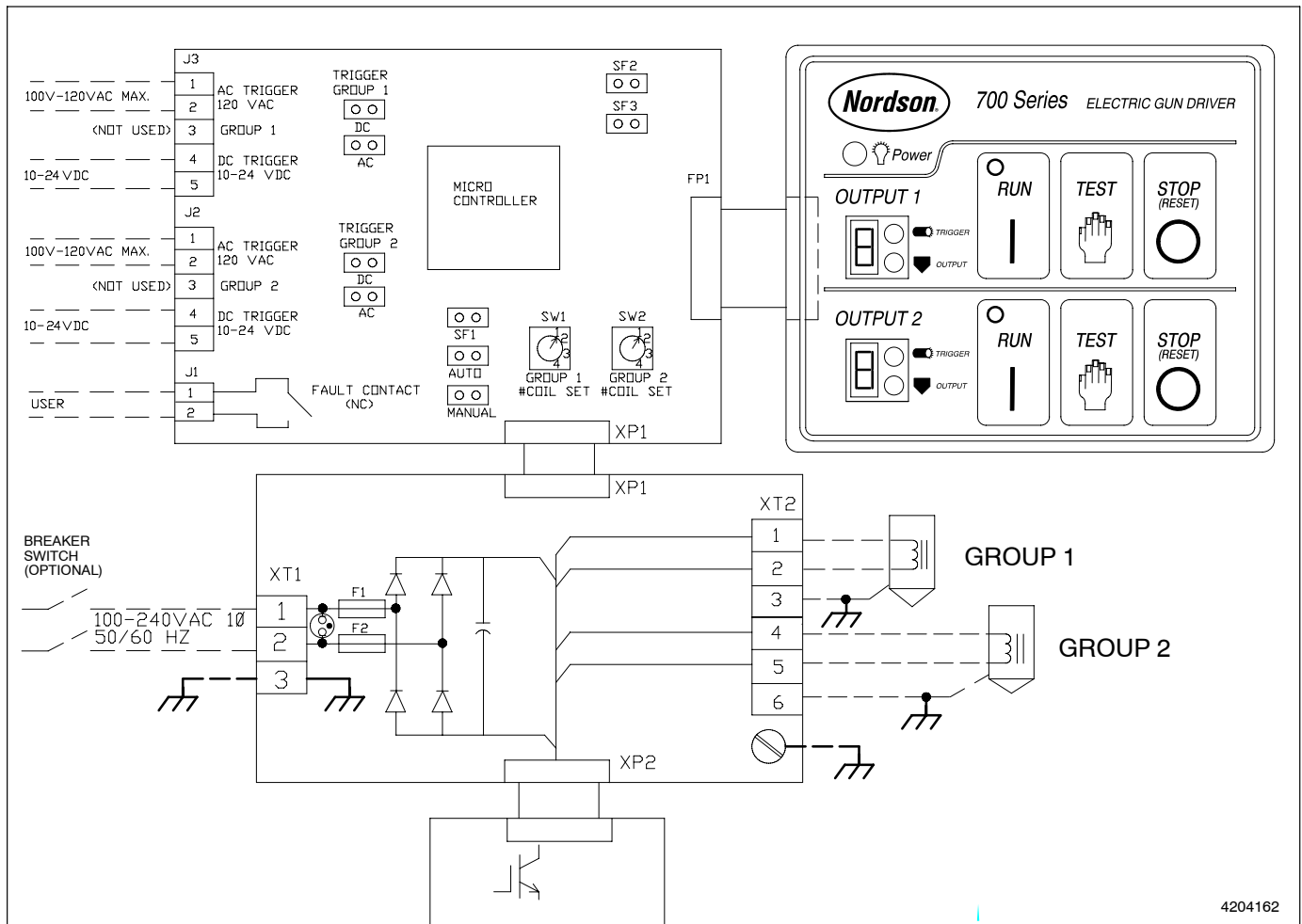


Figure 22 700 Series Gun Driver Wiring Diagram

E700 Gun Driver Card Schematic

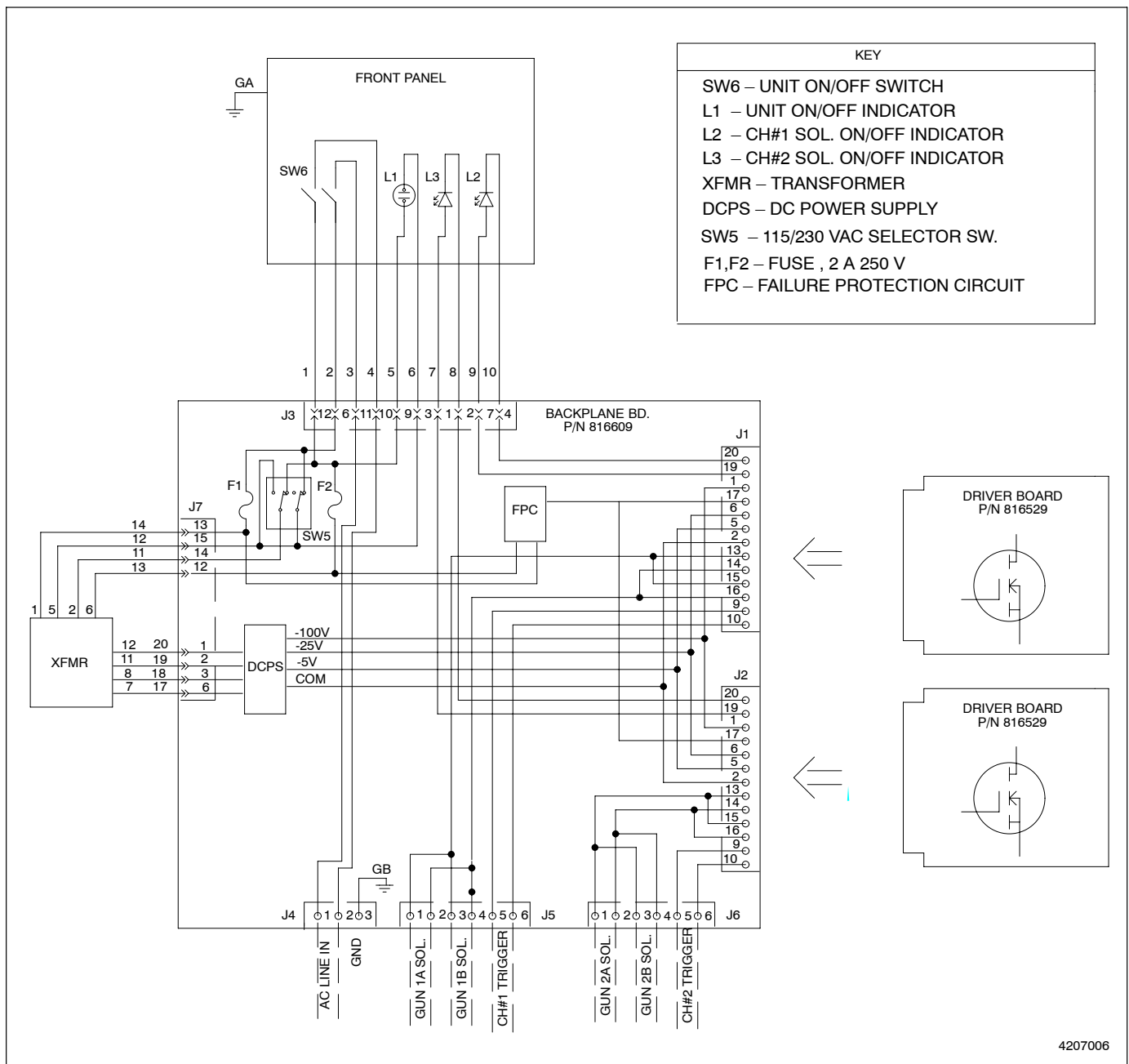
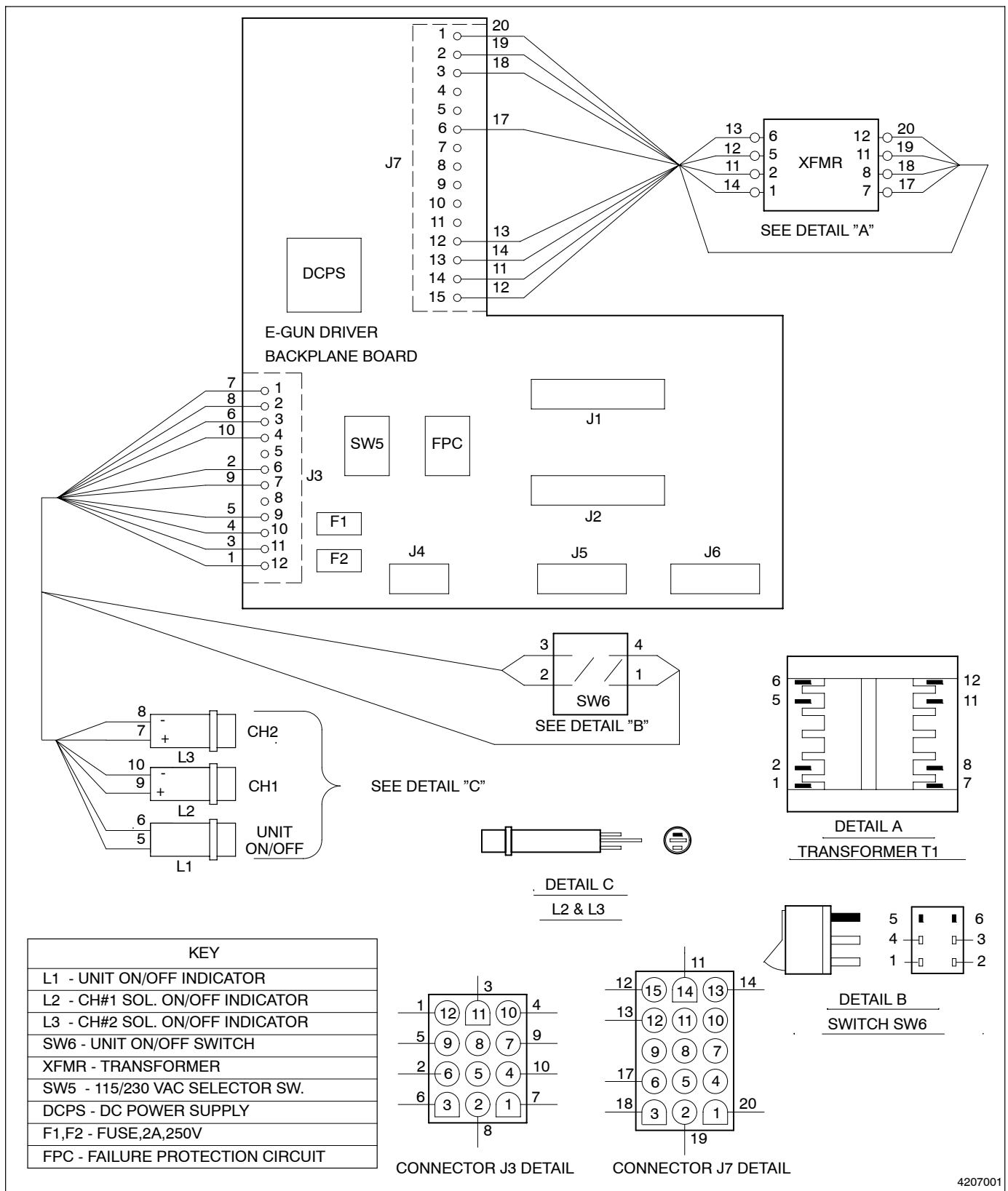


Figure 23 E700 Gun Driver Card Schematic (Transformer-based)

E700 Gun Driver Backplane Board



4207001

Figure 24 E700 Gun Driver Backplane (Transformer-based)

Repair



WARNING: Allow only personnel with appropriate training and experience to operate or service the equipment. The use of untrained or inexperienced personnel to operate or service the equipment can result in injury, including death, to themselves and others, and damage to the equipment.

Electrical Repairs

This section contains instructions for the replacement of E700 gun components. The heater cartridge, RTD, and the coil are the only components that can be replaced.

Removing the Electrical Cover



WARNING: Hot! Risk of burns. Wear heat-protective clothing, safety goggles, and safety gloves while repairing the guns.



WARNING: Failure to relieve hydraulic pressure can result in serious burns. Relieve system pressure as directed in the *Safety* section of this manual.

1. Relieve hydraulic pressure.
2. Disconnect and lockout external power.
3. Disconnect the hose and trigger electrical connections.

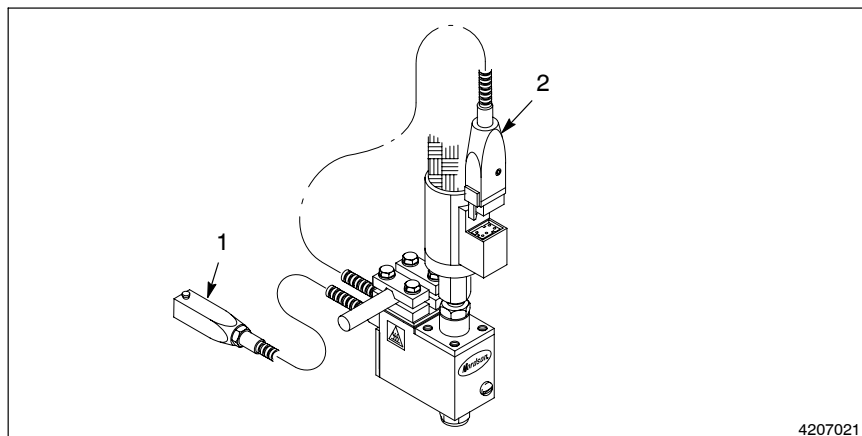


Figure 25 Unplugging the Hose and Trigger Connectors

- | | |
|----------------------|-------------------|
| 1. Trigger connector | 2. Hose Connector |
|----------------------|-------------------|

Removing the Electrical Cover *(contd)*

4. Use a screwdriver to remove the four screws that secure the electrical cover to the service block.
5. Remove the electrical cover and gasket.

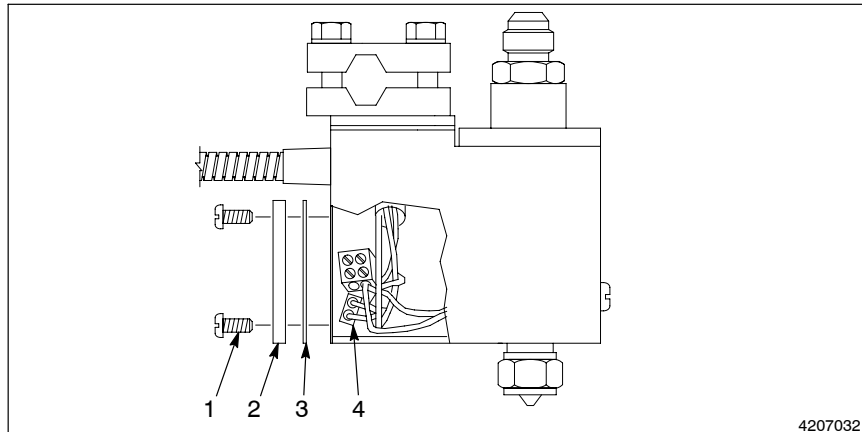


Figure 26 Removing the Electrical Cover

- | | |
|-----------------------------|----------------------------|
| 1. Fillister head screw (4) | 3. Electrical cover gasket |
| 2. Electrical cover | 4. Wire terminal blocks |

Replacing the Heater Cartridge

1. Disconnect the heater cartridge leads from its terminal block.
2. Remove the pan head screw that holds the heater cartridge in its hole.
3. Remove the heater cartridge.

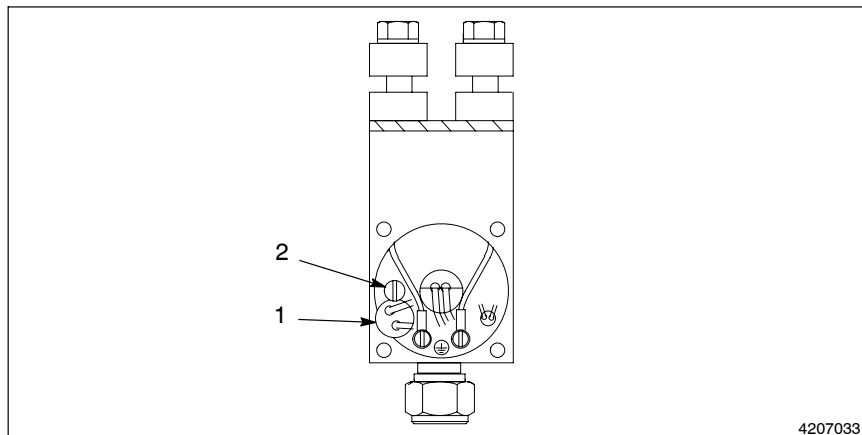


Figure 27 Removing the Heater Cartridge

- | | |
|---------------------|-------------------|
| 1. Heater cartridge | 2. Pan head screw |
|---------------------|-------------------|

NOTE: If the heater cartridge does not easily slide out, remove the screw at the opposite end of the gun from the electrical cover. Insert a rod into the screw hole and gently tap on the end of the rod with a hammer. Replace the screw after the heater cartridge is removed.

NOTE: Use ferrules with the stranded wire and the terminal blocks. The stranded wire can be inadvertently cut by tightening the terminal block screws if ferrules are not used.

4. Install the new heater cartridge and attach the leads to the terminal block.

CAUTION: Do not use tinned wire leads with the terminal blocks. Tinned leads may corrode or melt at elevated temperatures resulting in shorted components or inaccurate temperature control.

5. Replace the pan head screw that holds the heater cartridge in its hole and tighten.
6. Refer to *Replacing the Electrical Cover* in this section to return to normal operation.

RTD Removal and Replacement

1. Disconnect the RTD leads from the terminal block.
2. Remove the RTD from its mounting hole in the service block.

NOTE: The pan head ground screw may have to be loosened and the wire moved to get the RTD out.

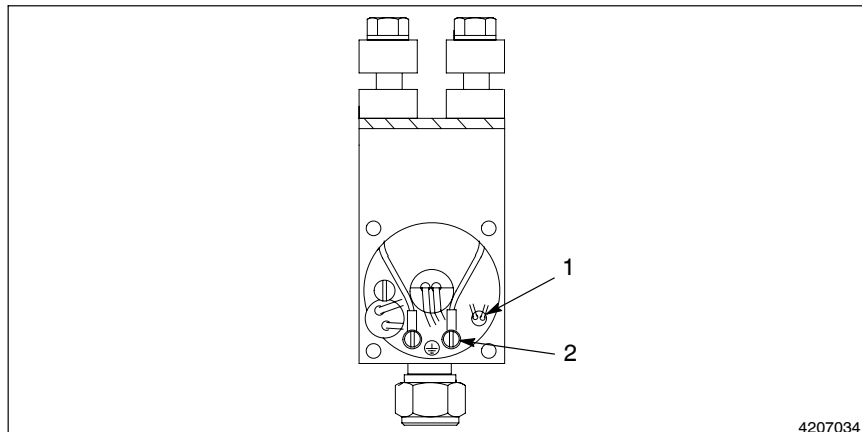


Figure 28 Removing the RTD

1. RTD

2. Ground screw

3. Strip about 7 mm ($\frac{1}{4}$ in.) of insulation from the new RTD wires.

NOTE: RTDs are sold as a kit. Refer to *Recommended Spare Parts* in the *Parts* section for the part number.

RTD Removal and Replacement (contd)

CAUTION: Do not use tinned wire leads with the terminal blocks. Tinned leads may corrode or melt at elevated temperatures resulting in shorted components or inaccurate temperature control.

4. Connect the two RTD leads to the terminal block. The RTD is not polarity sensitive.

NOTE: Use ferrules with the stranded wire and the terminal blocks. The stranded wire can be inadvertently cut by tightening the terminal block screws if ferrules are not used.

5. Slide the RTD into its mounting hole in the service block.
6. Refer to *Replacing the Electrical Cover* to resume operation.

Coil Removal and Replacement

1. Disconnect the coil leads from the terminal block.
2. Remove the four screws from the coil cover and remove the coil cover.

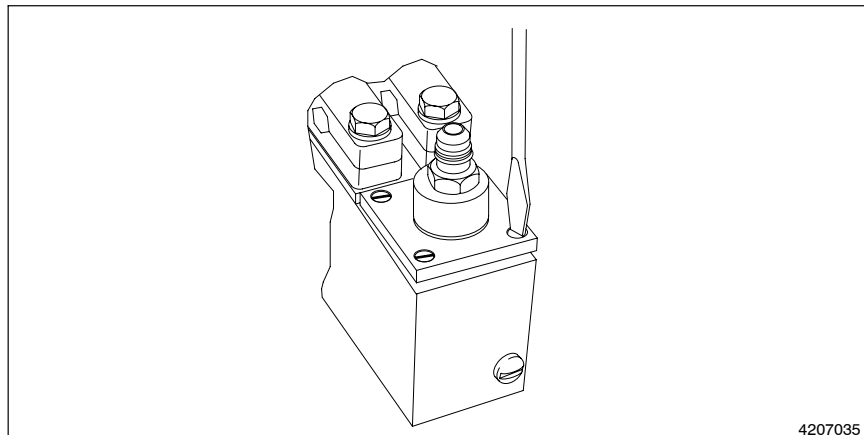


Figure 29 Removing the Coil Cover

3. Turn the E700 gun over and gently tap the gun mounting clamp on a hard surface, such as a table top, to dislodge the coil.

CAUTION: Do not tap the E700 gun's pole piece on the hard surface because it can be damaged easily.

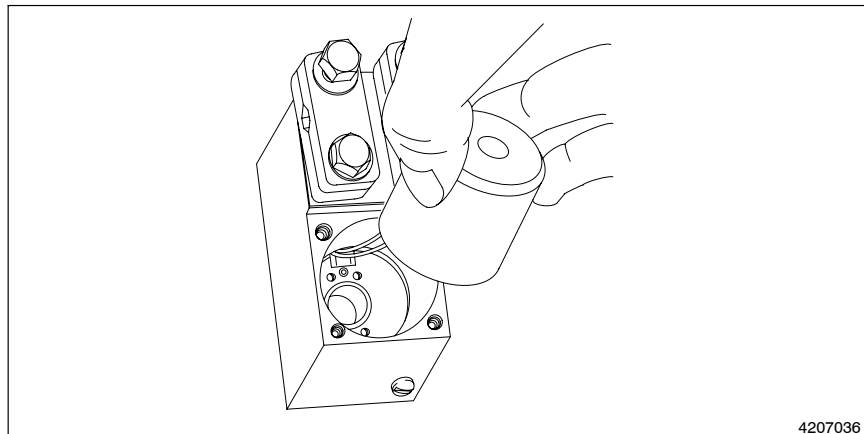


Figure 30 Removing the Coil

4. Remove and discard the coil and O-ring from the E700 gun.
5. Remove and discard the O-ring in the bottom of the hole for the coil.

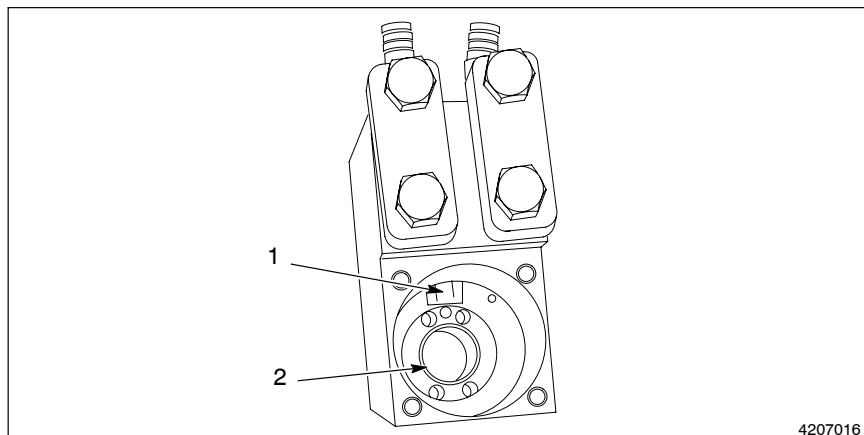


Figure 31 Removing the Bottom O-ring (Shown Without Pole Piece For Clarity)

1. Wire trough
2. Bottom O-ring

6. Install a new O-ring in the bottom of the hole for the coil and apply O-ring lubricant to the O-ring.
7. Route the coil wires down through the coil hole, into the electrical service area, and then slide the coil into place.
8. Connect the coil leads to the terminal block.

CAUTION: Do not use tinned wire leads with the terminal blocks. Tinned leads may corrode or melt at elevated temperatures resulting in shorted components.

NOTE: Use ferrules with the stranded wire and the terminal blocks. The stranded wire can be cut by tightening the terminal block screws if ferrules are not used.

Coil Removal and Replacement (contd)

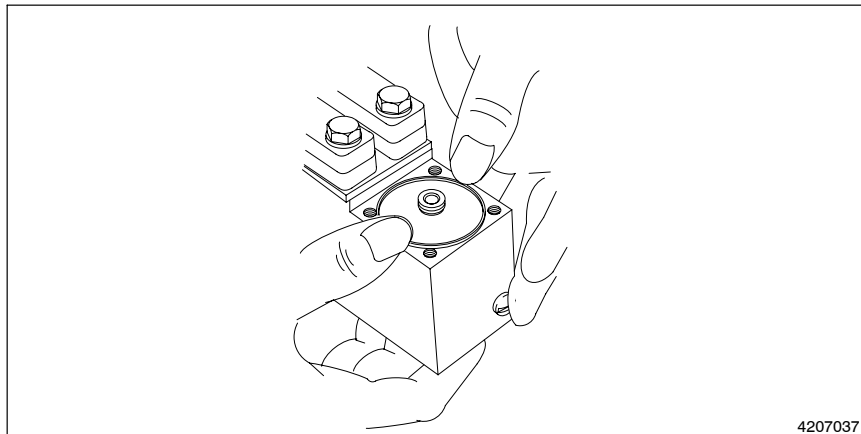


Figure 32 Installing the New Coil

9. Apply O-ring lubricant to the new O-ring for the top of the coil and install.
10. Install the coil cover and secure with the four screws.
11. Install the E700 gun to the parent machine. Refer to *Mounting the Gun*.

Replacing the Electrical Cover

1. Replace the electrical cover and gasket and secure with the four cover screws.

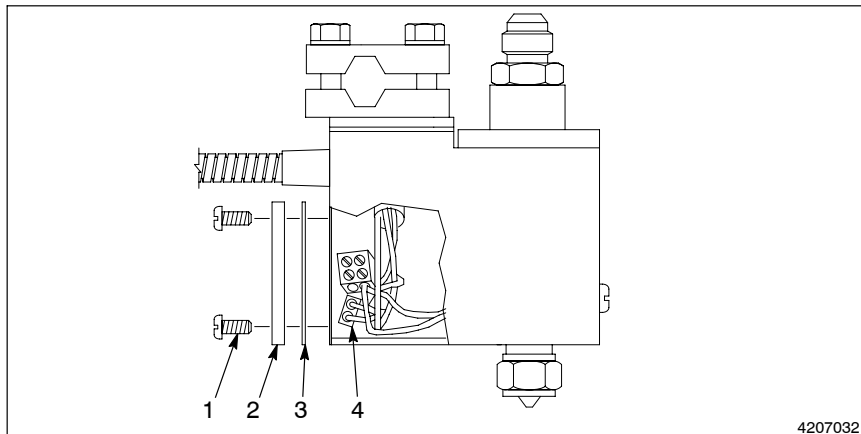


Figure 33 Installing the Electrical Cover

- | | |
|-----------------------------|----------------------------|
| 1. Fillister head screw (4) | 3. Electrical cover gasket |
| 2. Electrical cover | 4. Wire terminal blocks |
2. Reconnect the hose and trigger electrical connections.
 3. Restore power.
 4. Restore the system to normal operation in accordance with the melter manual.

Parts

To order parts, call the Nordson Customer Service Center or the local Nordson representative. Use this five-column parts list, and the accompanying illustration, to describe and locate parts correctly.

Using the Illustrated Parts List

Numbers in the Item column correspond to numbers that identify parts in illustrations following each parts list. The code NS (not shown) indicates that a listed part is not illustrated. A dash (–) is used when the part number applies to all parts in the illustration.

The six-digit number in the Part column is the Nordson Corporation part number. A dash in this column (–) means the part cannot be ordered separately.

The Description column gives the part name, as well as its dimensions and other characteristics when appropriate. Indentions show the relationships between assemblies, subassemblies, and parts.

Item	Part	Description	Quantity	Note
–	000 000	Assembly	1	
1	000 000	• Subassembly	2	A
2	000 000	• • Part	1	

- If you order the assembly, items 1 and 2 will be included.
- If you order item 1, item 2 will be included.
- If you order item 2, you will receive item 2 only.

The number in the Quantity column is the quantity required per unit, assembly, or subassembly. The code AR (As Required) is used if the part number is a bulk item ordered in quantities or if the quantity per assembly depends on the product version or model.

Letters in the Note column refer to notes at the end of each parts list. Notes contain important information about usage and ordering. Special attention should be given to notes.

E700 Electric Gun Parts List

Item	Part	Description	Quantity	Note
—	110 593	E700 Electric Gun, 240 VAC, Water-Resistant	Ref	A
—	153 694	E700 Electric Gun, 200 VAC	Ref	B
—	101 176	E700 Electric Gun, 240 VAC	Ref	C
1	111 761	• Cover, Coil	1	
2	940 304	• O-ring, Viton, 1.625 x 1.75 in.	1	
3	101 167	• Coil, Encapsulated, 29-ohm	1	
4	—	• Body, Gun	1	
5	148 966	• Screw, Seal, M6 x 8 mm	1	
6	982 327	• Screw, Fillister Head, M4 x 12 mm	8	
6	982 005	• Screw, Chez Head, Slotted, M4 x 10	4	A,B
7	152 290	• Nut, Retaining	1	
8	—	• Sleeve Assy, Pole Piece, w/seat	1	
9	981 905	• Screw, Drive, 2 x 0.187 in.	1	
10	—	• Gasket, Cover, Electrical	1	
11	—	• Cover, Electrical	1	
12	939 586	• Connector, Plastic, 2 Sta.	3	C
13	101 184	• Insulator, Mounting	1	
14	134 000	• Retainer Assy, Gun	1	A,B
15	972 657	• Connector Assy, Gun	1	
16	101 351	• Cordset, Coil	1	C
17	101 166	• Cordset, Power	1	C
18	939 523	• Sensor, Temperature, Gun	1	
19	982 311	• Screw, Fillister Head, M3 x 6 mm	2	
20	101 178	• Heater, Cartridge, 240V, 200W, 0.50 in. x 1.50 in.	1	A,C
20	141 616	• Heater, Cartridge, 200V, 200W, 0.50 in. x 1.50 in.	1	B
21	982 164	• Screw, Pan Head, Slotted, M4 x 6 mm	1	
22	940 161	• O-ring, Viton, 0.614 x 0.70 in.	1	
23	900 223	• Lubricant, O-ring, Parker	AR	
24	148 522	• Gasket, Cover, Water-Resistant	1	B
NS	110 653	• Installation Kit	1	
NS	111 934	• Cord, Interconnect, E700, Coil	1	
NOTE A: E700 Electric Gun, 240 VAC, Water-Resistant B: E700 Electric Gun, 200 VAC only C: E700 Electric Gun, 240 VAC AR: As Required NS: Not Shown				

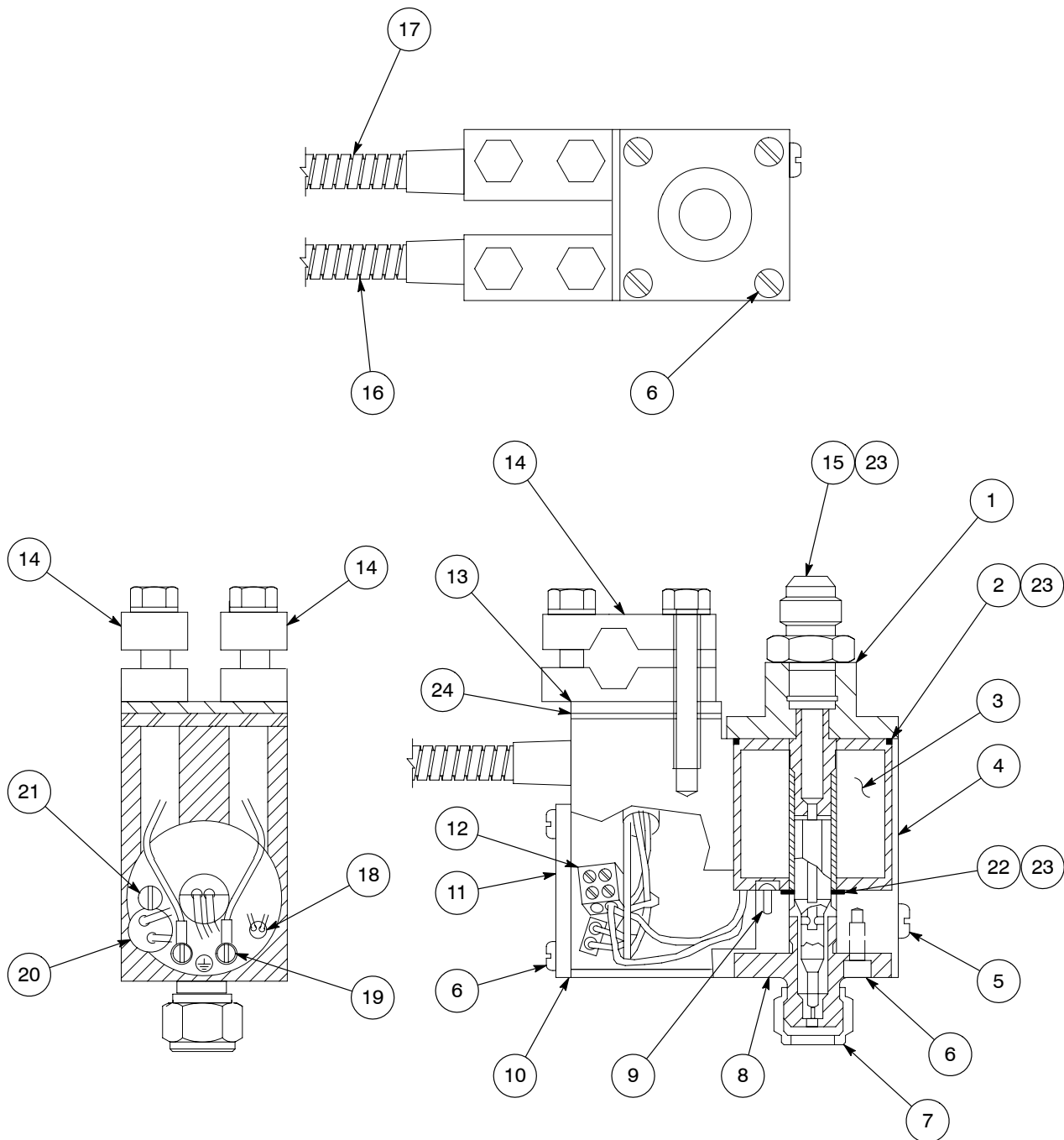


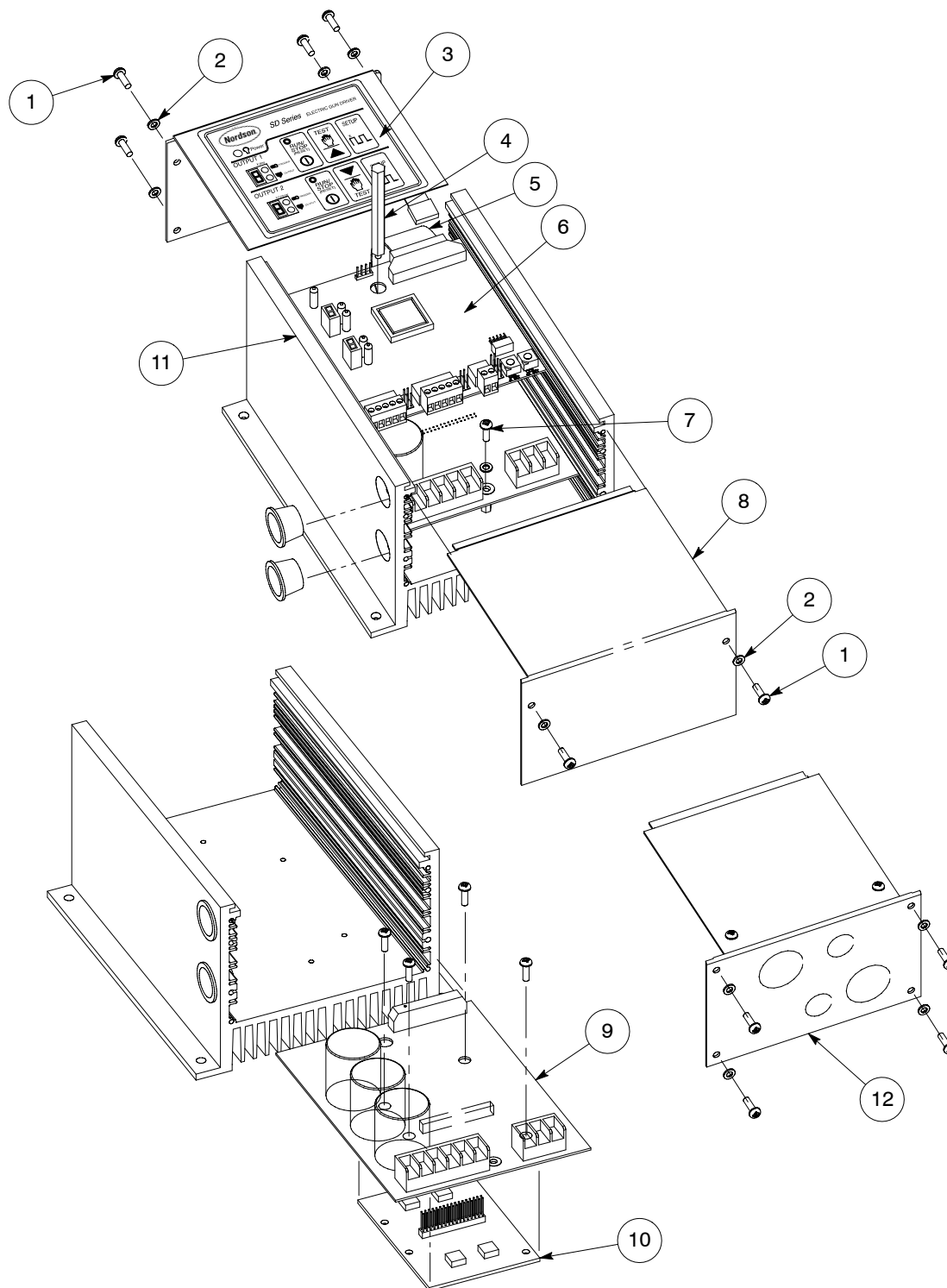
Figure 34 E700 Electric Gun

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700 Series Electric Gun Driver Parts

The 700 series electric gun driver parts list is included for reference only.
Refer to the manual that came with the driver when ordering parts.

Item	Part	Description	Quantity	Note
—	174 917	E700 Gun Driver	1	
1	982 601	• Pan Head Screw, M4 x 12 mm	6	
2	983 421	• Lock Washer, M4	7	
3	—	• Membrane Panel	1	
4	178 173	• Standoff, 3 in. 4 mm x 0.7 Hex	1	
	178 174	• Standoff, 6 in. 4 mm x 0.7 Hex	1	
5	167 859	• Ribbon Cable Assembly, 2.5 in.	1	
6	—	• Micro-Controller	1	
7	982 580	• Screw, Pan Head, M4 x 8 mm	5	
8	178 172	• Panel, Access	1	
9	—	• Power Supply Circuit Board	1	
10	—	• Power Module Circuit Board	1	
11	—	• Extrusion	1	
NS	—	• Gasket Cover	1	
NS	—	• Panel, Back, Keypad	1	
NS: Not Shown				



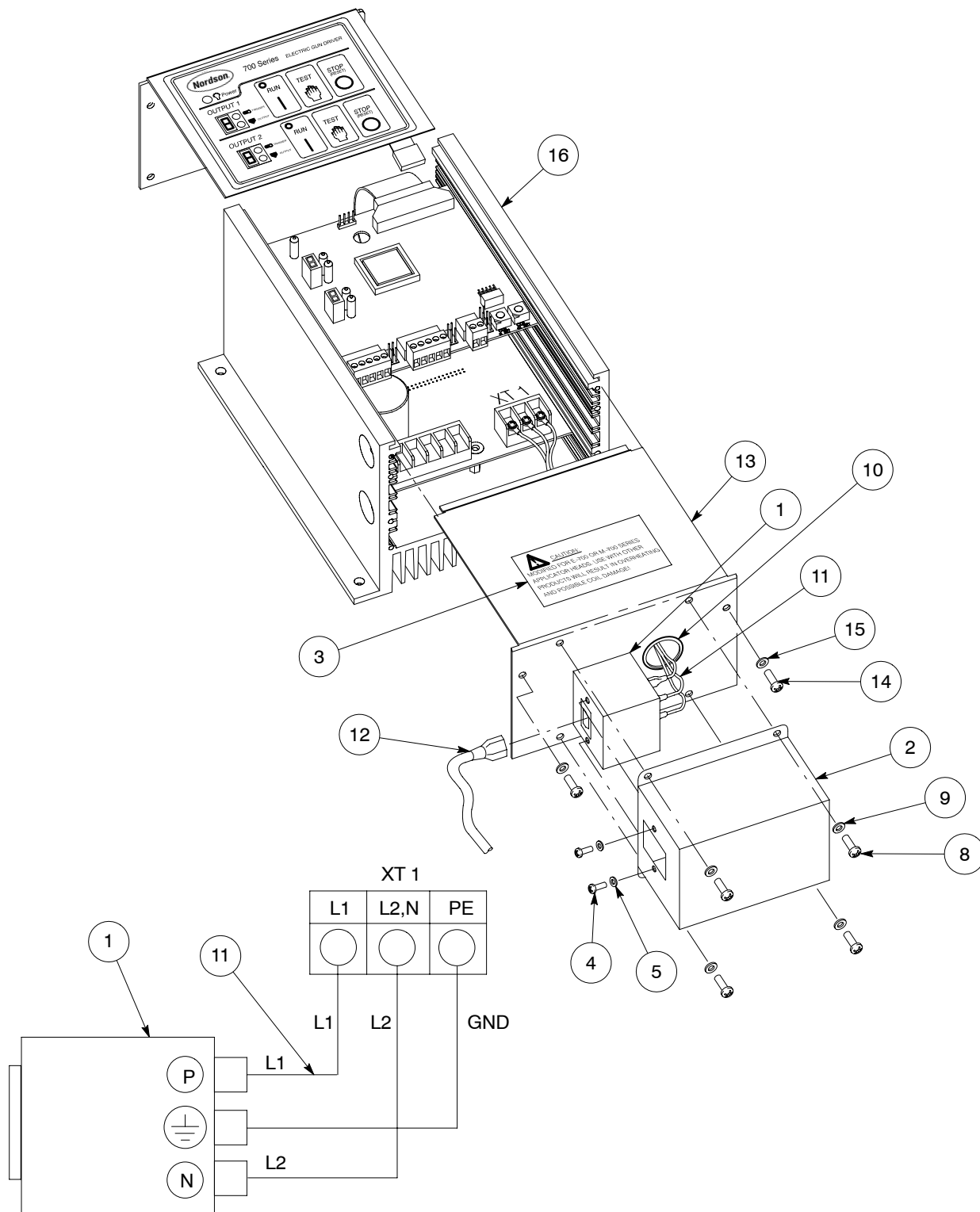
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Figure 35 700 Series Electric Gun Driver Assembly

700 Series Line Filter Parts

If the 700 series electric gun driver is used in a CE approved installation, the 700 series line filter kit option must be used. The 700 series line filter parts list is included for reference only. Refer to the instruction sheet that came with the 700 series line filter kit when ordering parts.

Item	Part	Description	Quantity	Note
—	174 940	Line Filter Kit	—	
1	—	• Filter, Line 110/250, 6A	1	
2	236 339	• Cover, Filter, Line	1	
3	—	• Tag, Caution	1	
4	982 091	• Screw, Pan, Slot, M3x6 mm	2	
5	983 400	• Washer, Lock, Split, M3	2	
6	—	• Not Shown	—	
7	—	• Not Shown	—	
8	982 426	• Screw, Pan, Recessed, M4x8 mm	4	
9	983 402	• Washer, Flat, Narrow, M4	4	
10	324 896	• Grommet, Rubber, 0.812 in. ID x 1.25 in. OD	1	
11	236 341	• Harness, E26, Filter	1	
12	231 671	• Cable Assembly, 250 V, 10 A, 3-Conductor, Power	1	
13	236 340	• Panel, Access	1	
14	982 601	• Screw, Pan Head, Thread Forming, M4x12 mm	2	
15	983 421	• Washer, Lock, External, M4	2	
16	174 917	• E700 Series Electric Gun Driver	—	A
NOTE A: Shown for reference only.				



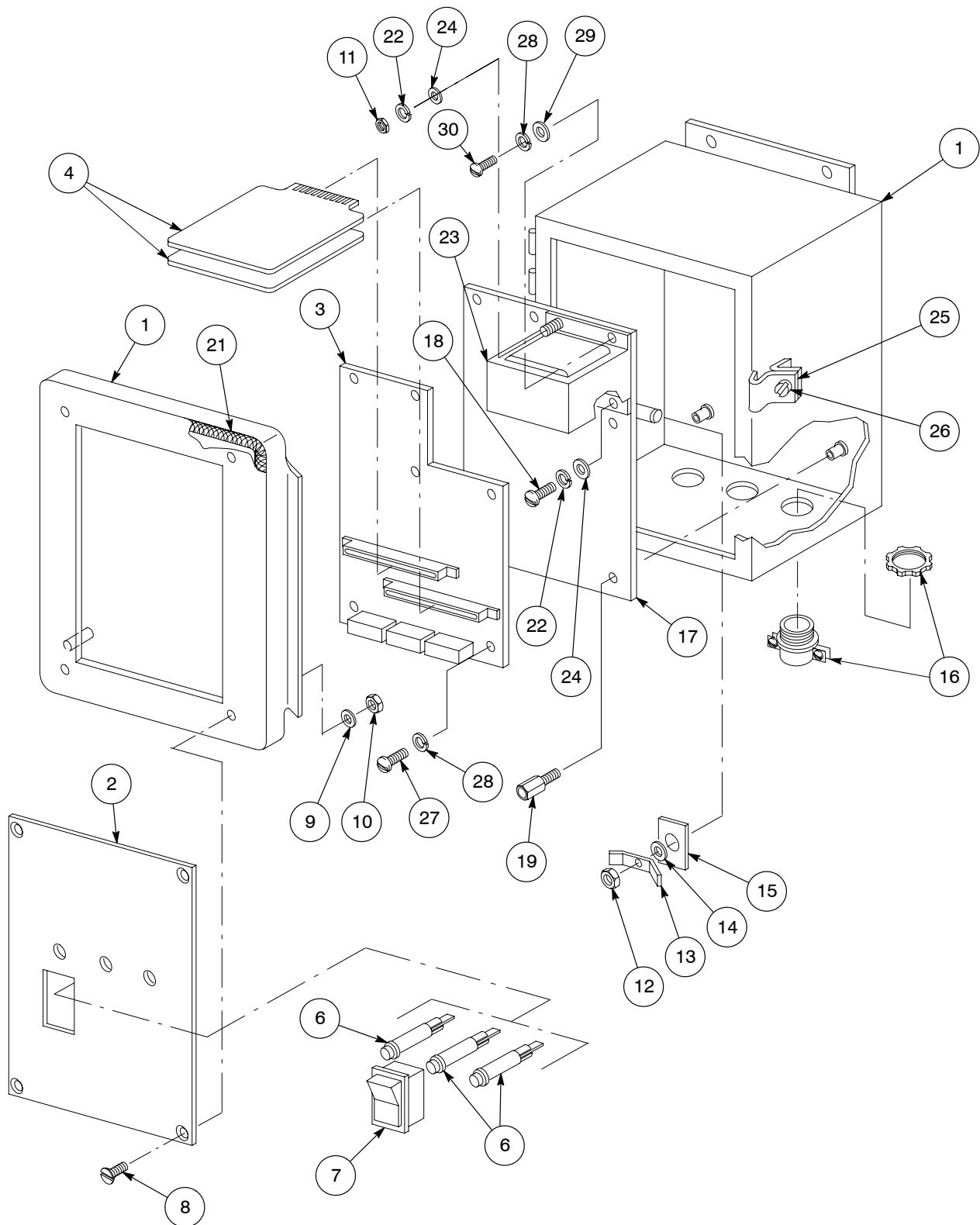
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Figure 36 700 Series Line Filter Kit Option

E700 Gun Driver Assembly Parts List

The E700 gun driver parts list is included for reference only. Refer to the manual that came with the driver when ordering parts.

Item	Part	Description	Quantity	Note
—	101 084	Driver Assembly, E700 Electric Gun	Ref	
1	—	• Enclosure Assy, 4-gun	1	
2	—	• Nameplate	1	
3	816 609	• Board Assy, Backplane, 4-gun	1	
4	816 529	• Board Assy, Driver, Electric Gun	1	
5	101 299	• Lamp, Neon, 125V	1	
6	101 298	• Lamp, LED, 12V	2	
7	807 293	• Switch, Rocker, DPDT, 2-position	1	
8	982 142	• Screw, Flat Head, Slotted, M3 x 10 mm	4	
9	983 400	• Lockwasher, Split, M3	4	
10	984 700	• Nut, Hex, M3	4	
11	984 111	• Nut, Hex, 8-32	2	
12	984 702	• Nut, Hex, M5	2	
13	271 221	• Lug, Terminal, Ground, 45	2	
14	983 401	• Lockwasher, Split, M5	2	
15	240 674	• Tag, Ground	2	
16	101 185	• Connector, Strain relief, 2-screw	3	
17	—	• Panel	1	
18	981 064	• Screw, Pan Head, 8-32 x 0.375 in.	1	
19	101 172	• Stand-off, Male/Female, Hex, 10-32	6	
20	242 654	• Gasket, Cabinet	1	
21	983 111	• Lockwasher, Split, #8	2	
22	—	• Transformer, 115/230 VAC	1	
23	983 010	• Washer, Flat, 0.188 x 0.375 x 0.040 in.	3	
24	242 687	• Latch, Cabinet	2	
25	981 247	• Screw, Fillister Head, 1/4-28 x 0.625 in., W/Nylok	2	
26	981 141	• Screw, Pan Head, 10-32 x 0.250 in.	6	
27	983 120	• Lockwasher, E, Split, #10	7	
28	983 123	• Washer, Flat, #10	1	
29	981 160	• Screw, Pan Head, 10-32 x 0.50 in.	1	



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Figure 37 E700 Driver Assembly (Transformer-based Driver)

Recommended Spare Parts

Table 7 E700 Electric Gun

Part	Description	Note
101 167	Coil, Encapsulated	1
111 764	Sleeve, Pole Piece Assy w/Seat, 0.025 in stroke ^{1,2}	1
101 178	Heater	1
939 523	RTD	1
112 864	Service Kit, O-ring	1

Table 8 Drivers

Part	Description	Note
939 941	Fuse, 5 x 20, 6.3 Amp, 250V, Slow-Blow, 700 Series Driver (P/N 174 917)	2

Table 9 Drivers

Part	Description	Note
939 768	Fuse, 5 x 20, 250V/2A, E700 Driver (P/N 101 084)	2
816 529	Board, E-Gun, E700 Driver	1

Table 10 Accessories

Part	Description	Note
111 934	Cordset, 10 ft, E700 gun driver to gun cordset	1
111 586	Cordset, 20 Ft. extension, cable to gun cordset	1
132 426	Hose/Gun diagnostic device	1

Notes

1. The Nordson Hose/Gun Diagnostic Device enables precise and complete heater and RTD troubleshooting for RTD-controlled E700 guns. The device quickly diagnoses gun RTD and heater troubleshooting without removing the guns from the hoses. Contact a Nordson representative for further information.
2. The E700 HP version has a shorter stroke for higher viscosity materials. This design is flow restricted and may not be suitable for packaging. Replacement P/N 239 086, sleeve, pole piece assembly, 0.015 in. gap.
3. P/N 239 085 is a service kit created for the modular electric guns (M-700 series). Same as P/N 111 764.

Service Kits

Table 11 Kits for the E700 Gun

Part	Item	Description
110 653	Installation kit, E700	Contains a PTFE sleeve to insulate the mounting clamp from the mounting bar and an insulation cuff to be used to insulate the hose to gun fitting connection.
901 915	Cleaning kit, hot melt nozzle	Use to safely clean hot melt nozzles. Refer to parts list below.

The hot melt nozzle cleaning kit consists of a pin vise and three vials of nozzle probes in a wood case. All items listed in the parts list below may be ordered separately.

Table 12 Hot Melt Cleaning Kit

Part	Description	Quantity	Nozzle Size
901 915	Hot Melt Nozzle Cleaning Kit	1	—
901 925	• Tool Box Assembly	1	—
901 916	• Pin Vise	1	—
901 922	• Vial of Probes 0.178 mm (0.007 in.) dia.	1	0.203 mm (0.008 in.)
901 923	• Vial of Probes 0.279 mm (0.011 in.) dia.	1	0.304 mm (0.012 in.)
901 924	• Vial of Probes 0.356 mm (0.014 in.) dia.	1	0.41 mm (0.016 in. and up)

Nozzles

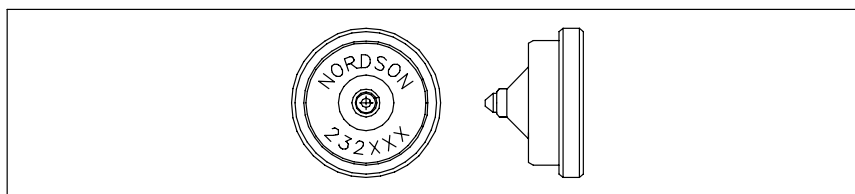


Figure 38 232 XXX, Single Orifice with Insert

232 XXX ⁽¹⁾ Single orifice with insert	Engage- ment mm (in.)	Orifice Diameter mm (in.)							
		0.20 (0.008)	0.25 (0.010)	0.31 (0.012)	0.36 (0.014)	0.41 (0.016)	0.46 (0.018)	0.51 (0.020)	0.61 (0.024)
Brass adapter, stainless-steel insert ⁽²⁾	1.3 (0.050)	232 000	232 001	232 003	232 007	232 011	232 015	232 019	232 023
	1.9 (0.075)		232 002	232 004	232 008	232 012	232 016	232 020	232 024
	2.5 (0.100)			232 005	232 009	232 013	232 017	232 021	232 025
	3.8 (0.150)			232 006	232 010	232 014	232 018	232 022	232 026

232 XXX ⁽¹⁾ Long Engagement, Single Orifice with Insert	Engage- ment mm (in.)	Orifice Diameter mm (in.)						
		0.31 (0.012)	0.36 (0.014)	0.41 (0.016)	0.46 (0.018)	0.53 (0.021)	0.61 (0.024)	0.71 (0.029)
Brass adapter, stainless-steel insert ⁽²⁾	7.6 (0.300)	226 727	226 728	226 729	226 730	226 731	226 732	226 733

(1) Use 232 XXX nozzles for all applications.

(2) Use with retainer P/N 152 290.

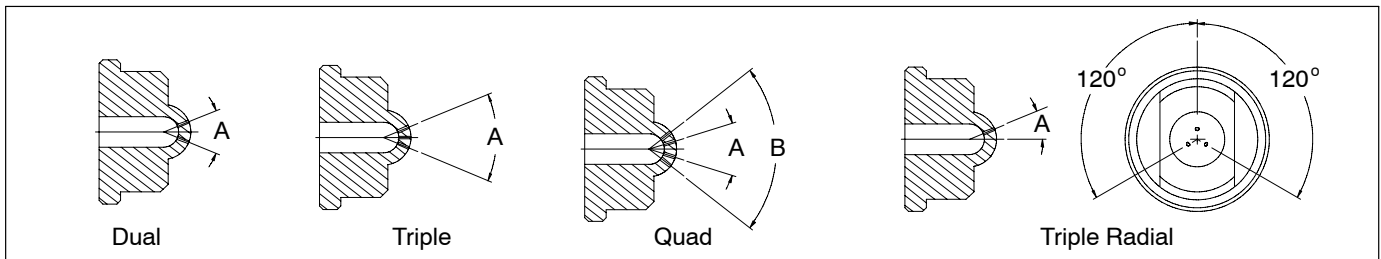


Figure 39 220 XXX Domed Nozzles

Note: A and B refer to the measured angles from the center line shown for each nozzle. For example, a dual 16° nozzle from the chart below, would have 8° above the center line and 8° below the center line.

220 XXX Domed Nozzles	Orifice Diameter mm (in.)						
	0.20 (0.008)	0.25 (0.010)	0.31 (0.012)	0.36 (0.014)	0.41 (0.016)	0.46 (0.018)	0.51 (0.020)
Phosphor bronze ⁽¹⁾							
Dual 16°	132 488		220 019	705 831	220 053		703 684
Dual 24°	709 983		220 009		705 205		220 045
Dual 30°	702 681	703 661	220 007	220 067	702 948	706 743	808 255
Dual 45°	220 000	220 001	220 002	220 003	220 004	220 005	220 006
Dual 60°	712 230	712 231	703 669		220 046		220 047
Triple 30°			220 048	704 115	220 049		804 487
Triple 45°	220 010	220 011	220 012	220 013	220 014	220 015	220 016
Triple 60°	704 380		220 050		100 651		220 051
Radial Triple 22.5°			704 113	220 034	703 469	804 760	220 052
Quad 35/76°	220 020	220 021	220 022	220 023	220 024	220 025	220 026
Steel, black oxide coated ⁽¹⁾							
Dual 16°			220 060	231 151	231 156	220 066	231 158
Dual 24°			220 059	231 152	231 157	220 077	231 159
Dual 30°			220 058	220 071	159 417	220 078	220 080
Dual 45°			220 054	220 055	220 056	220 057	220 081
Triple 30°			220 068	220 072	220 073	220 079	220 082
Triple 45°			220 064	231 153	220 074		
Radial Triple 22.5°			220 069	231 154	220 075		
Quad 35/76°			220 061	220 062	220 076		
Radial Quad 22.5°			220 070	231 155	220 065		

(1) Use with retainer P/N 152 290.

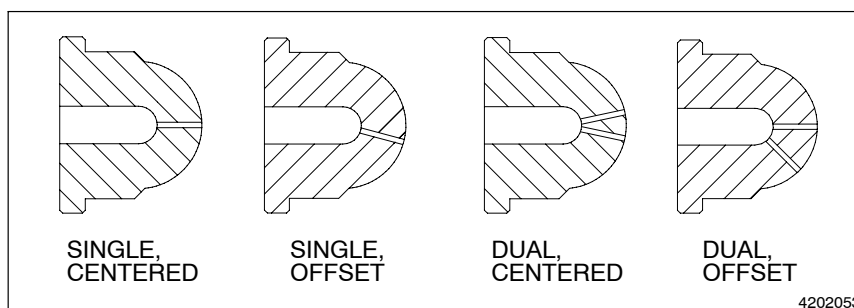
Nozzles (contd)

Figure 40 Long Engagement, Domed Nozzles; Single Orifice and Dual Orifice

Long Engagement, Domed Nozzles ⁽¹⁾⁽²⁾	Engagement mm (in.)	Orifice Diameter mm (in.)			
		0.36 (0.014)	0.41 (0.016)	0.46 (0.018)	0.51 (0.020)
Steel, black oxide-coated					
Dual, 30°, centered	0.31 (0.100)		226 773	226 774	301 980
Dual, 60°, centered	0.31 (0.100)		301 979	725 017	301981
Dual, 0°, 45°, offset	0.31 (0.100)	234 878			
Phosphor bronze					
Dual, 24°, centered	0.36 (0.150)		301 977	228 827	301 978
Steel, black oxide-coated					
Single, 0°, centered	0.36 (0.150)		301 159	724 771	301 969
Single, 15°, offset	0.36 (0.150)		301 960	724 671	301 970
Single, 22.5°, offset	0.36 (0.150)		301 961	724 788	301 971
Dual, 16°, centered	0.36 (0.150)		301 962	301 967	301 972
Dual, 24°, centered	0.36 (0.150)		301 963	301 968	301 973
Dual, 30°, centered	0.36 (0.150)		301 964	189 174	301 974
Dual, 0°, 45°, offset	0.36 (0.150)	234 876	301 965	724 770	301 975
Dual, 45°, centered	0.36 (0.150)		301 966	724 789	301 976
Triple, 45°, 0°, 45°, centered	0.36 (0.150)		234 877		

- (1) Used to increase hydraulic pressure range in gear-to-line and run-up applications. Requires at least 2413.16 kPa (350 psi) for clean cut-off.
- (2) Use with retainer P/N 152 290.
- (3) The pattern consistency and cut-off of the single orifice domed nozzles will be inferior to a similar 232 XXX nozzle. See note (1).

